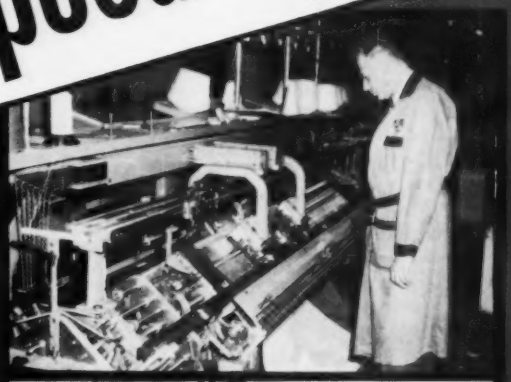
TEXTILE WORLD

NOVEMBER 1961 PRICE $1
A McGRAW-HILL PUBLI

Late Report—Hottest news in textiles:

Depreciation Speed-Up page 17



Pushbutton Yarn Handling ....page 42

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Knitting Quality Goods...page 55

Package Dyer's Dream...page 86

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How Saco-Lowell spotted the unknown cause of a known cost

The equipment seemed in order, the yarn looked fine. But part of it failed to meet the mill's high standards. Why? Saco-Lowell's Testing Laboratories were asked to find out.

Tests using the customer's yarn revealed far more than the eye could see. Next came a careful comparison with yarn identically spun in Saco-Lowell's pilot plant. Finally, this finding: a bent bottom calender roll on the card — damaged very slightly but enough to cause trouble.

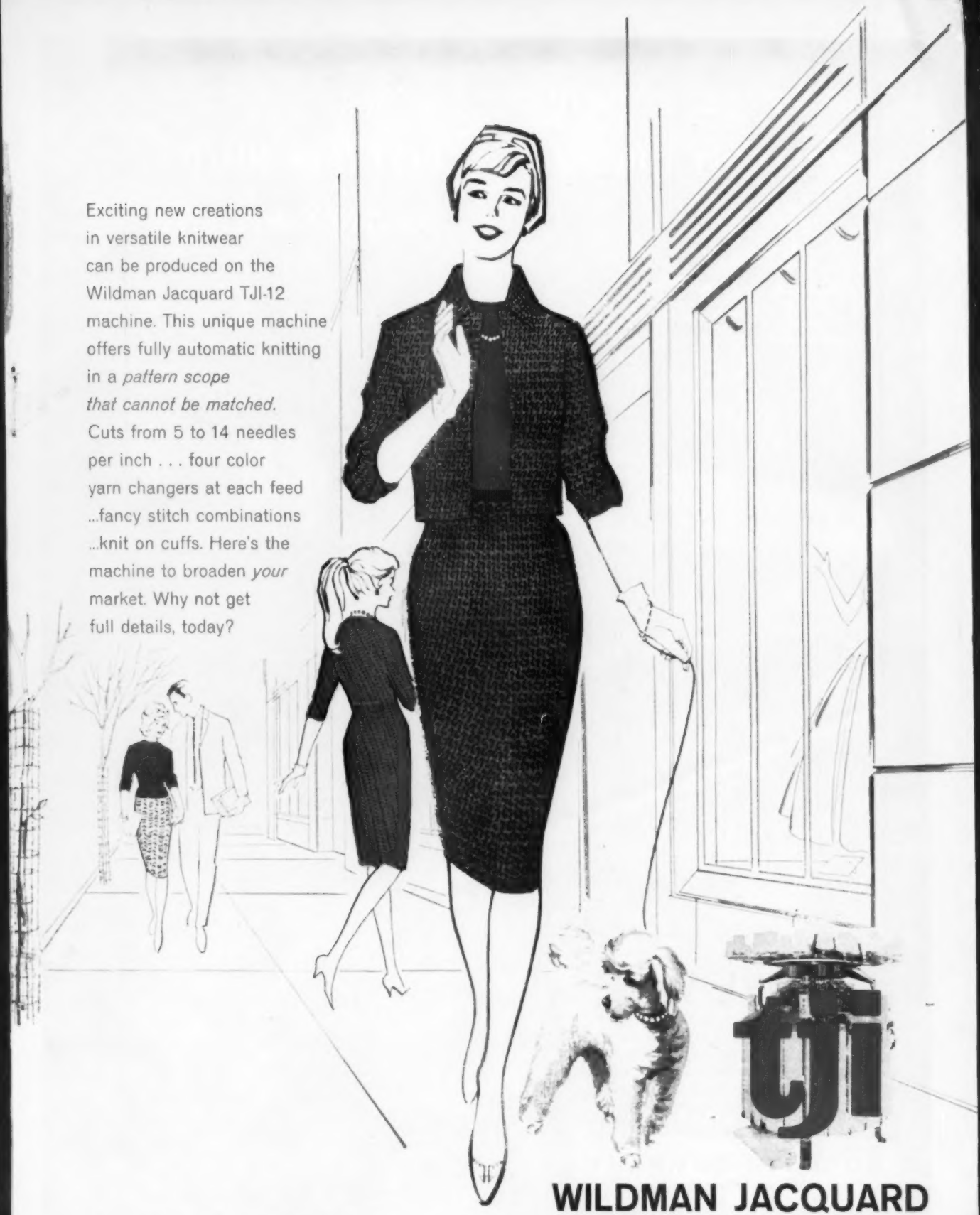
Replacement of the roll ended the mill's problem — **but not Saco-Lowell's interest in it.** As in all such tests, a full report went to Saco-Lowell's technical library. It was brought to the attention of sales and service engineers, through whom it can be shared with other customers. And the story may not be ended yet, for tests such as this frequently affect engineering and manufacturing decisions.

Saco-Lowell has invested nearly $1,000,000 in its Easley, S. C. customer-service laboratories — continuing evidence that Saco-Lowell equipment, **built for better performance,** is **backed by better service,** too.

SACO-LOWELL SHOPS

TEXTILE MACHINERY DIVISION

EXECUTIVE OFFICES: DRAWER 2327, GREENVILLE, S. C.
SALES OFFICES: ATLANTA, GA. — 805 PEACHTREE ST., N. E.
GREENVILLE, S.C. — P.O. Box 1698; CHARLOTTE, N.C. — P.O. Box 149;
GREENSBORO, N.C. — 601 N. Elm St. Bldg.; SACO, MAINE — P.O. Box 230



Exciting new creations in versatile knitwear can be produced on the Wildman Jacquard TJI-12 machine. This unique machine offers fully automatic knitting in a *pattern scope that cannot be matched.* Cuts from 5 to 14 needles per inch . . . four color yarn changers at each feed ...fancy stitch combinations ...knit on cuffs. Here's the machine to broaden *your* market. Why not get full details, today?

tji

WILDMAN JACQUARD

WILDMAN JACQUARD CO. • 1210 STANBRIDGE ST. • NORRISTOWN, PENNA. • MANUFACTURERS OF HEMPHILL BANNER KNITTING MACHINES

A Subsidiary of Draper Corporation, Hopedale, Mass. • The only circular knitting machine using a true Jacquard patterning mechanism.

UNMATCHED VERSATILITY

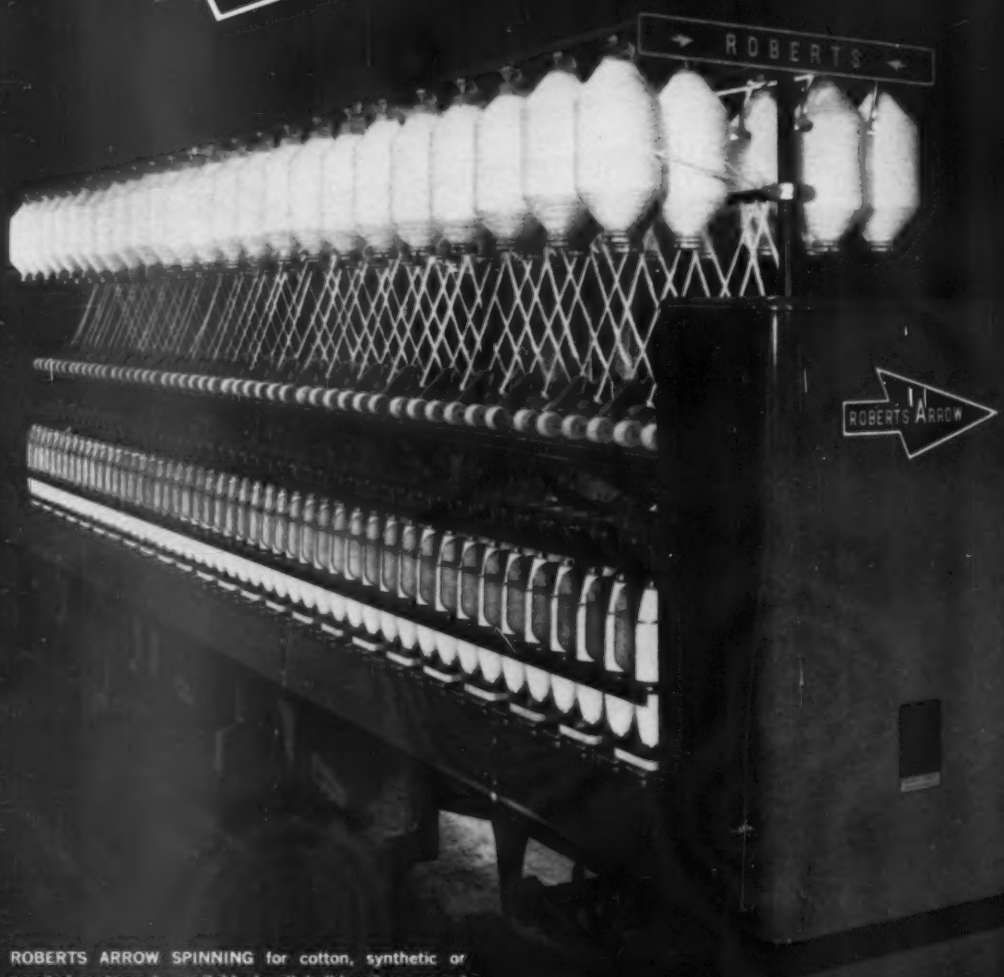
ATTRACTIVE LOW PRICE

INCREASED SPEEDS

BEST YARN QUALITY

RUGGED SIMPLICITY

ROBERTS ARROW



ROBERTS ARROW SPINNING for cotton, synthetic or worsted systems is available in all ball-bearing, rugged long-life frames of 25-inch or 36-inch width. More than 1,500 Arrow Frames are in mill operation.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

ROBERTS ARROW SPINNING.. AN INVESTMENT FOR PROFIT

Profit is the ultimate motive behind the purchase of new spinning or any other capital equipment. And profit essentially depends upon the spread between selling price and manufacturing costs.

In as keenly a competitive industry as textiles, profits are generally determined not so much by high prices but more by high quality coupled with low costs so that products of superior saleability, or value, can be offered.

In yarn spinning, low costs with high quality depend mainly on Versatility, Productivity, and Dependability.

The answer: Roberts Arrow Spinning . . . An Investment for Profit.

CUTS COSTS AND RAISES QUALITY 10 WAYS

➨ **INCREASED SPEEDS!** 20% to 50% higher, even up to 15,000 r.p.m. spindle speed, achieved by dynamic balancing of all components, plus maximum use of ball bearings.

➨ **UNMATCHED VERSATILITY!** Changes in fiber, yarn number, draft, twist and bobbin build are quickly accomplished. Coarse or fine yarns from 2s to 120s count. Choice of drafting systems: FC for short or long staple cotton plus staple synthetics to 2"; GS for synthetic fibers from 1½" to 3" or worsteds to 6½"; GW for all synthetic fibers, worsteds or blends up to 8" length.

➨ **HIGH DRAFTS!** A broad range of drafts from 10 to 60 is successfully handled on new Arrow Spinning, eliminating roving processes, improving fiber blending, increasing fiber control and upgrading quality.

➨ **HIGHEST YARN QUALITY!** New Arrow Spinning consistently spins stronger, more even yarns. Superior yarn quality with consistency from bobbin to bobbin is assured by simple, gadget-free drafting systems which provide effective fiber control and uniform weighting on all spindles.

➨ **REDUCED CLEANING, MAINTENANCE!** Elegantly functional, new Arrow Spinning has been designed and engineered for cleaner, trouble-free operation. Simplification of components, fewer parts and streamlined design provides reduced cleaning, more quickly done.

➨ **FULLY BALL BEARING EQUIPPED!** in all moving, turning, rotating and oscillating parts for smooth, dependable performance with substantially lowered electric power consumption. Lubrication requirements are eliminated or minimized.

➨ **SPACE SAVING WIDTH!** Only Arrow Spinning is available in both 25-inch and 36-inch widths. The 25-inch space-saving frame permits installation of five machines in the space formerly occupied by four, increasing spindleage and production by 25% in the same mill area.

➨ **BIGGER, HEAVIER PACKAGES!** Arrow Spinning puts more yarn on the bobbin, tighter wound due to better yarn tension through its frame geometry. Larger rings, longer bobbin lengths and improved bobbin build increase package size and weight, resulting in longer doff cycles plus substantial savings in winding with less knots.

➨ **RUGGED CONSTRUCTION!** and close precision of manufacture and assembly assure quality and long life of Arrow Spinning. Refined and streamlined, free of gadgetry and frills, and engineered for peak performance, new Arrow Spinning features many technological improvements contributing to better, less costly spinning.

➨ **ATTRACTIVE LOW PRICE!** The superior operational economy and productivity of new Arrow Spinning, and its new low investment cost, provide for a quick return on investment.

Installation of Arrow Spinning Frames,
Butte Mills Division, Jonathan Logan, Inc.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 3

TEXTILE WORLD

VOLUME 111, NO. 11 NOVEMBER, 1961

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Coming Next Month:

Resins and Reactants–Where They Stand Today

A special report in **December** TEXTILE WORLD covers the latest in resins and reactants. How to handle them, how they pose problems for you, and how they work with different fibers—these are some of the highlights of this up-to-the-minute review.

Also in December you'll get the latest word in fiber identification. This comprehensive study will tell you about the latest in solubility tests and will bring you photomicrographs (longitudinal and cross-sectional) for all the important fibers in use today, plus new information on five other methods used for identifying fibers.

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Glenn H. Bull, Overseer of Spinning at Abney Mills, Woodruff, South Carolina, and W. T. Coker, Asst. Manager of Armstrong's Greenville, S. C., office, discuss production on this spinning frame. The frame is equipped with Accotex J-490 cots on front and back lines; aprons are NO-7075.

Accotex cots and aprons can help you produce stronger, more uniform yarn

Mill men know that the strength and uniformity of their yarn depend largely on the performance of their spinning cots and aprons. That's why hundreds of these men rely on Armstrong Accotex Cots and Aprons to control excessive lapping, eyebrowing, and yarn irregularities. They know from experience that the complete Accotex line contains a range of materials designed to get high production of quality yarn with any natural fiber, synthetic, or blend . . . and on any type of equipment.

These same mill men know, too, that when they have an unusual problem, they can count on their Armstrong man to help. A good example is Armstrong man, Walter T. Coker, shown here working with personnel of Abney Mills, Woodruff, South Carolina.

Take advantage of the experience and knowledge of your Armstrong man when you have a roll covering or apron problem. Armstrong Cork Company, 6411 Dauphin Street, Lancaster, Pa.

ACCOTEX IS A REGISTERED TRADEMARK OF ARMSTRONG CORK COMPANY.

Alvin B. Poole, Overseer of Carding, and Walter Coker examine rolls on this drawing frame. Roll covers are Accotex NC-762.

Charles Sherbert tends a roving frame equipped with Accotex NC-762 cots on front lines; NC-727 cots on back lines; J-490 cots on middle lines; NO-7876 aprons.

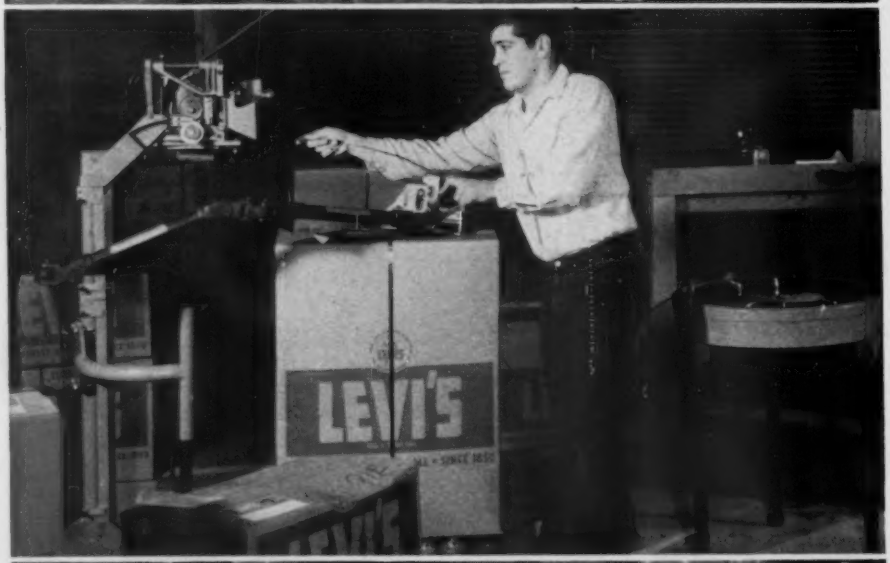
D. E. Ross, Superintendent of this Abney Mills plant, chats with Coker about new textile developments.

Armstrong
ACCOTEX COTS AND APRONS

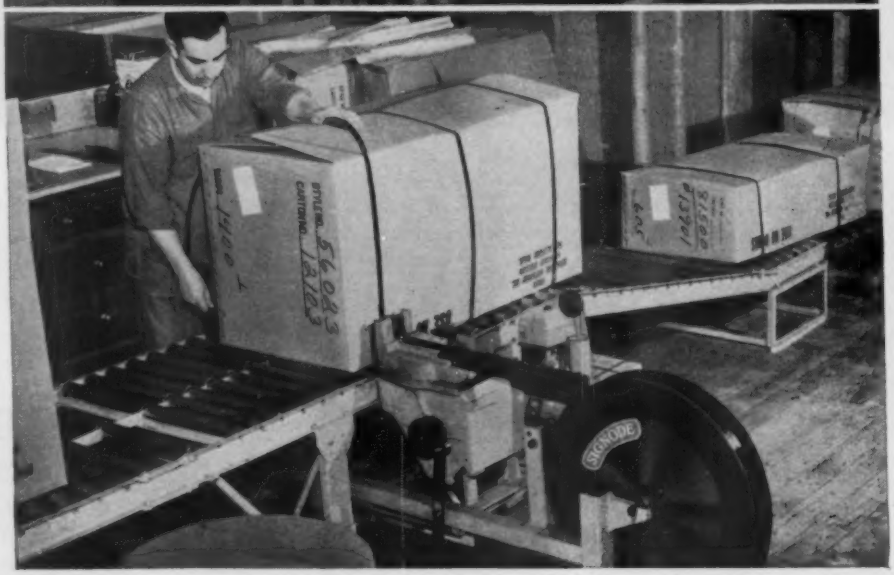
FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 7

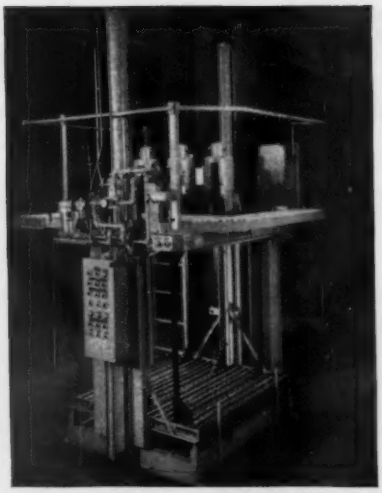
Signode Model SFC manually-operated seal feed strapping tool tensions, seals and scores strap at the seal for easy break-off with fast, smooth, one-arm movement. Weighs only 6½ lbs., and its almost perfect balance makes it easy to handle with one hand. In the illustration, the operator is using the SFC in the Signode strap-saver baling method, which reduces strap use by as much as 17%.

Signode Power Strap Feeder is a motorized, foot-pedal operated device for putting strap around big packages. It eliminates the need for a helper, enables one man to strap as many as 500 large cartons per day. Can be used with the Model AP strapping tool shown, or any of Signode's hand, air, or electric powered combination strapping tools.



Signode Power Strapping Machine automatically feeds, tensions, seals and severs the strap in seconds. One operator readily applies strapping more than fast enough for the highest production rates. May be used on cartons, bundles, boxes or bales of varying sizes, giving uniform pre-set tension at the touch of a foot pedal. Completely automatic strapping stations also available.





New Signode Texomatic Compression Strapping Machine

The Texomatic is designed specifically for the textile industry with a compression capacity of 2,000 pounds. It is powered by three M-20 power strapping units that simultaneously and automatically feed, tension and seal one, two or three straps according to package length. Each of these 3-horsepower units is powerful enough to prevent overloading at fast speeds and high strap tensions. Even the conveyor is powered. All the operator does is push one button to compress and strap, another to convey the package.

Save Time, Money, Manpower ...the Signode Way

Signode can probably help you find ways to make substantial savings in time, money and manpower. Here are some of the reasons why we think so:

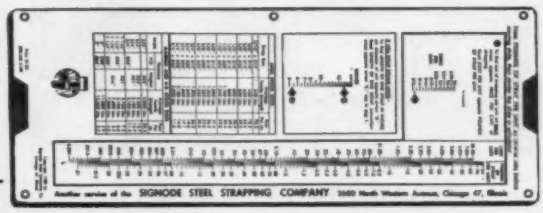
Our line of strapping equipment permits selection of the tool or machine that is right for the job. It includes hand tools, power tools, feeders, presses, and completely automatic machines. Our continuing program of product improvement is backed by 45 years of specialized experience.

The Signode man near you is experienced in the application of this equipment to textile strapping and packaging operations. He also can offer, if needed, the services of Signode's field engineering staff and extensive testing laboratories at no cost to you.

If you have not reviewed your strapping operations quite recently, it will almost certainly pay you to do so, with Signode. Potential savings go beyond the strapping operation....include savings for you in handling, storing, and shipping, plus savings for your customer.

The coupon below is for your convenience.

FREE! NEW Signode Steel Strapping Calculator helps you buy steel strapping at least cost according to your needs, and shows new strength figures for Signode steel strapping.



☐ Combination Strapping Tools
☐ Power Combination Strapping Tools and Feeders
☐ Air Power Tensioners & Sealers
☐ Compression Strapping Machines
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☐ Adjusta-Pak 3-way telescoping container
☐ We'd like to talk to the Signode man

SIGNODE
First in steel strapping

SIGNODE STEEL STRAPPING CO.
2642 N. Western Avenue, Chicago 47, Illinois

Please send new Signode Steel Strapping Calculator and additional information on the items checked.

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Offices Coast to Coast • In Canada: Canadian Steel Strapping Co., Ltd., Montreal, Toronto

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 9

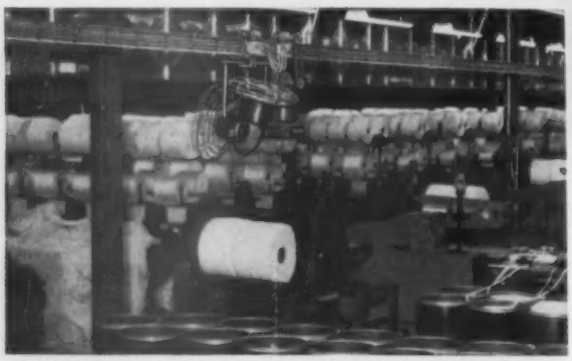
Now...keep your work areas clean automatically, with specially designed Amco Cleaners!

Amco has developed a wide selection of automatic cleaning equipment . . . designed to cut down manual cleaning, improve quality, and step up mill production.

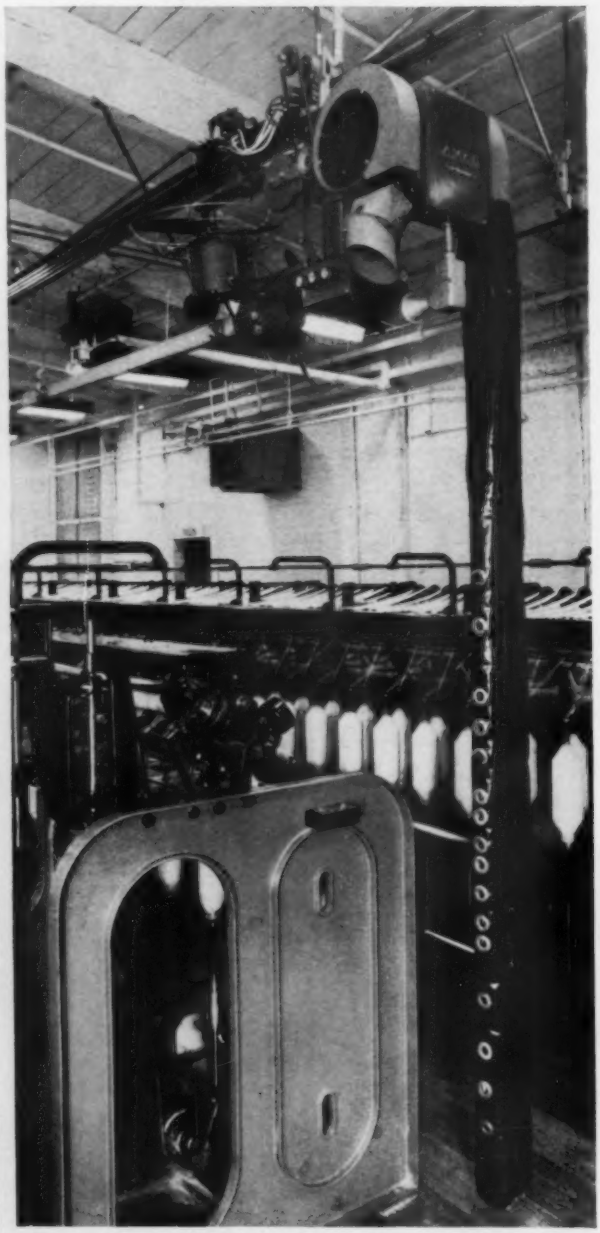
For money-saving facts about Amco Cleaners, call American Moistening Company — an organization with more than 70 years' experience serving the textile field.

Helicone Loom Cleaners improve quality of fabrics by preventing waste accumulation on stop motions, drop wires, harnesses and reed caps.

Amco Loom Cleaners over Draper shuttleless looms. Sheeting is being woven at high relative humidity.



Amco Ceiling Cleaner provides automatic cleaning of ceiling, beams, walls and other surfaces. Excellent for card room areas.



Amco's electronically controlled Roving Frame and Ceiling Cleaner. Air delivery boot takes care of specific lint-collecting trouble spots.

AMCO

SINCE 1888

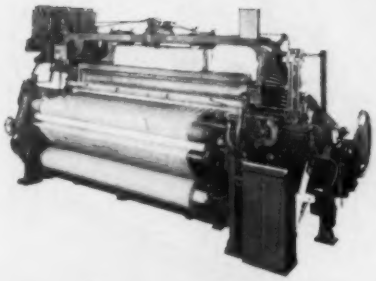
Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina

Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 11→

THE STANDARD FOR QUALITY...



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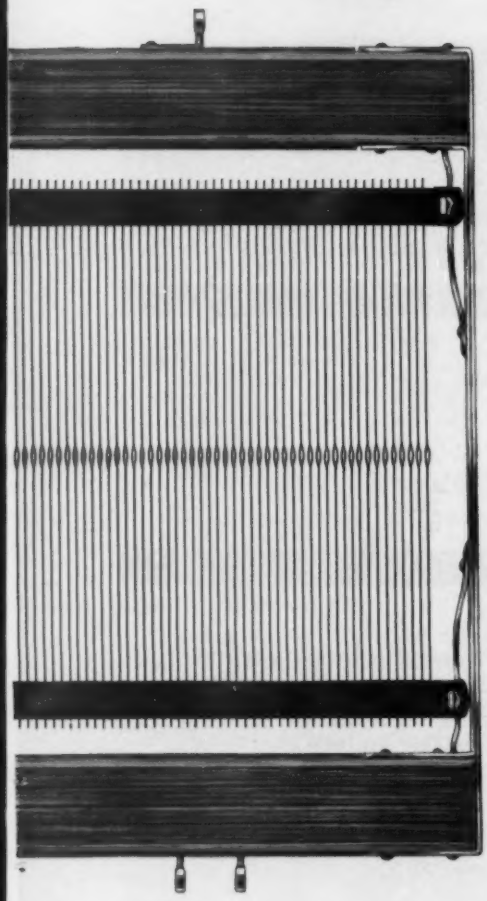

STEHEDCO Flat Steel Heddles and STEHEDCO Harness Frames have been unequaled for dependable Quality and Economy of operation from the time that Flat Steel Heddles were first introduced in this country by Steel Heddle Mfg. Co. in 1897.

All STEHEDCO Products are manufactured of Premium Quality materials under strict Quality Control, with the fine skill and experience of Master Craftsmen.

Numerous textile mills are completely equipped with STEHEDCO Frames and Heddles because they have proved through the years that they consistently give longer trouble-free service, and produce finer quality fabrics with economy you can bank on.

There are STEHEDCO Heddles and Frames for weaving every type of fabric, from the finest fabric to the heaviest carpet. Why don't you ask one of our qualified Sales Engineers to show how YOU CAN PROFIT MORE by using STEHEDCO Heddles and Frames. It's GOOD BUSINESS.

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GREENVILLE, S.C.
Southern

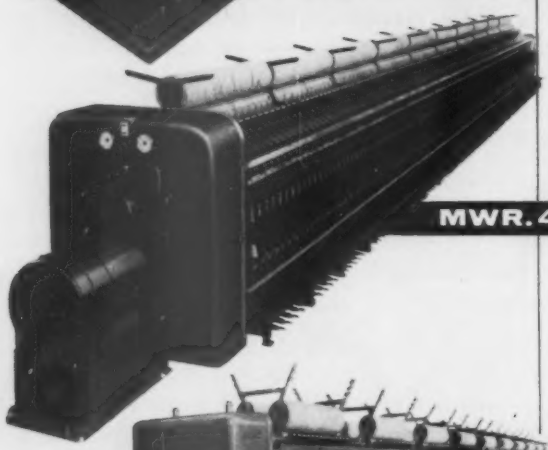
Illustration of C. & K. W-3 Loom courtesy of Crompton & Knowles Corporation

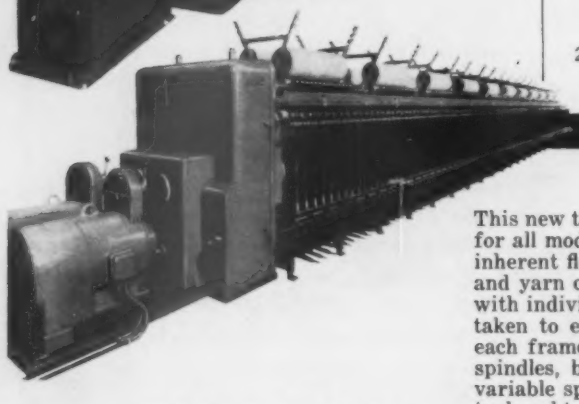
Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C. • Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

F-6013

NEW *Platt* TRIO for high speed WOOLEN SPINNING

. . . . from coarsest carpet and blanket yarns through finest flannels and Saxonies





	COUNT RANGE Y.S.E.	RING DIAMETER	LIFT	TWIST RANGE t.p.i.	GAUGE	SPINDLE SPEED R.P.M.
MWR. 3	2-20	4", 4½", 5", 5½"	17"	2-20	5½"-7"	2,800-5,600
MWR. 4	15-40	1¾"-4"	10"	2-25	2¾"-5¼"	4,400-8,800
	2-10 (cotton count waste)	2¼"-4"	12"			3,800-7,600
MWR. 5	15-40	2½"-7"	12"	2-25	4"-9"	3,800-7,600
			14"			3,300-6,600
	2-20		16"			3,000-5,900
			18"			2,600-5,300

Write for illustrated brochure

This new trio of Platt Ring Frames provides complete coverage for all modern spinning requirements. Each machine possesses inherent flexibility to handle the varying types of raw material and yarn characteristics. In addition, the MWR. 5 is equipped with individual drive to each side. Exhaustive tests were undertaken to establish the best design of spinning conditions for each frame with a full appreciation of today's needs. Spool top spindles, balloon control rings, higher traveller velocities and variable speed driving enable increased speeds and productions to be obtained, while large package spinning brings the advantages of longer runs, better weaving and subsequent processing with a reduced labor requirement. These frames are designed for cleanliness in operation and simplified maintenance.

ATKINSON, HASERICK & CO., Inc.
SALES • SERVICE • PARTS IN U.S.A.
FRAMINGHAM, MASS. • GREENVILLE, S. C. • PHILADELPHIA, PA.

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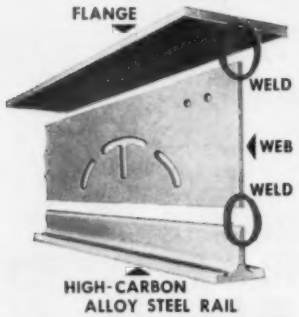
MEMBERS OF THE STONE-PLATT INDUSTRIES GROUP
Marketing the Textile Machinery Made in the Works of Platt Brothers & Co. Ltd. • Dobson & Barlow Ltd. • Howard & Bullough Ltd.

TARCA TRACK

TARCA TRACK TRADE MARK

Introducing a *Superior* OVERHEAD TRACK for *TEXTILE HANDLING*



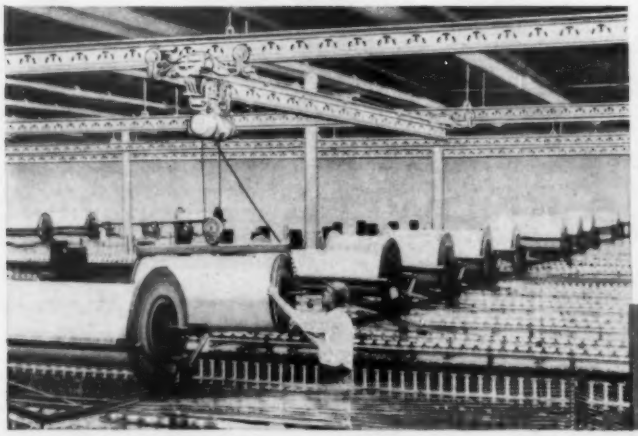
Here's an entirely new track that will withstand heavy, swinging, and impact loads — provide a smooth trouble-free overhead road for materials movement — assure extra years of service over ordinary tracks.

Tarca Track was perfected by Cleveland Tramrail after extensive research and testing. It is different from all other overhead tracks.

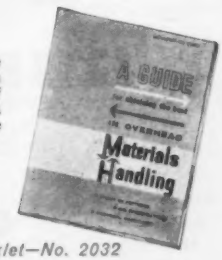
Tarca Track parts are proportioned to provide a perfectly balanced design to suit all load requirements. They are combined into one rugged section by automatically controlled welding. All welds are continuous to assure maximum rigidity.

Erection is easier, faster because Tarca Tracks are straight and accurate. Need of shimming and other time-consuming work is eliminated. New support fittings speed erection and facilitate track alignment.

Integrally Welded TARCA TRACKS are composed of a specially-rolled high-carbon steel rail with raised wearing treads, and a steel flange and web, welded into an integral one-piece section. Wide range of sizes, for loads from 500 lbs. to 20 tons.



Many hundreds of textile mills have depended for decades upon Cleveland Tramrail for much of their materials handling. TARCA TRACK offers additional assurance for finest performance.



Ask for this Helpful Booklet—No. 2032

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO
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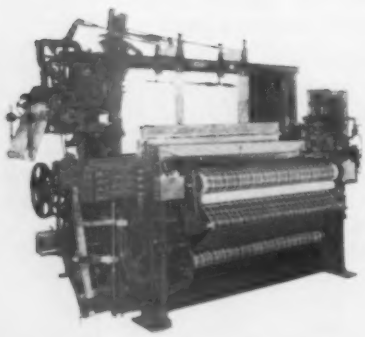
A few wires and switches have literally replaced 100 parts. Gone are most mechanical driving, shipping and protection levers and linkages, and much of the warp stop motion. Drive units are out in the open, easy to service.

In addition, the C-7 operates more smoothly so that there is less wear and tear on the loom. Better binder control prolongs life of pick motion parts, and the electric brake allows soft stops—even protection stops—to reduce fixing.

Weavers, fixers and plant supervisors have been impressed that the C-7 requires so little down time for maintenance. Its potential savings make maintenance one of the most important of our six control areas. Write us if we might discuss it further with you, or if you'd like a reprint of any in this series you may have missed.



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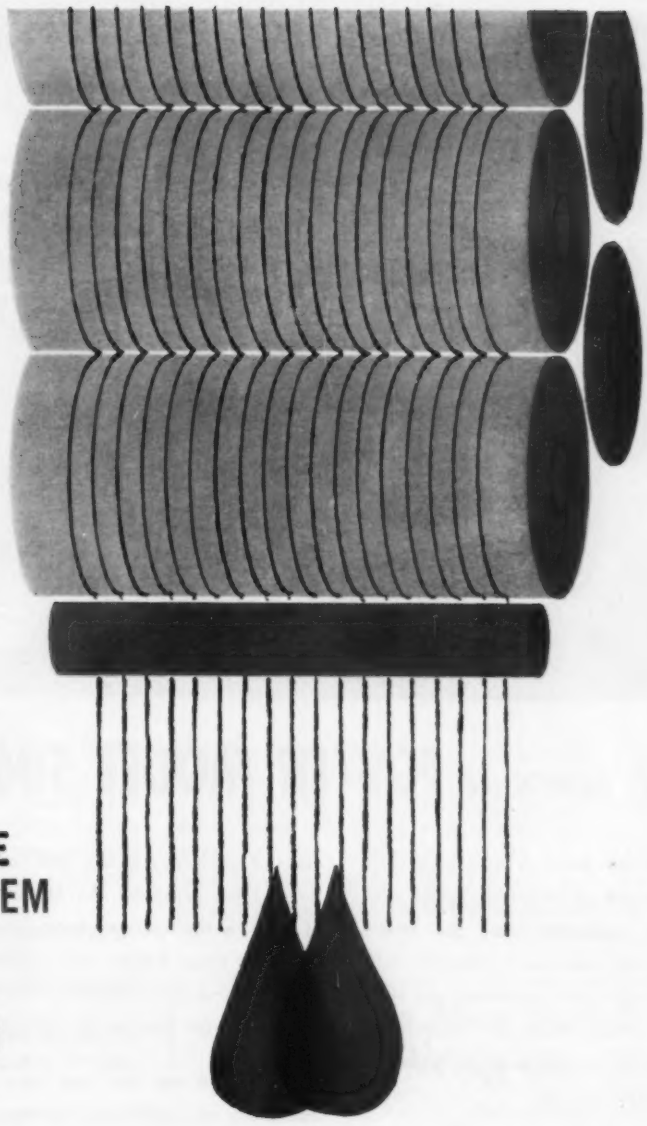

NEW MOISTURE CONTROL SYSTEM GIVES EXTRA-FAST RESPONSE FOR HIGH-SPEED SLASHERS

The new Honeywell *Moist-O-Graph IV* Control System delivers the extra-fast response needed to effectively measure and control regain of yarn on today's high-speed slashers.

Heart of the system's fast response is the new DPP (*Deviation Proportional Pulse*) Control Unit. By employing a new correcting technique, the DPP unit overcomes the production problems usually encountered with high-speed slashers equipped with conventional moisture control units.

In conventional systems, when the moisture deviates from the desired value, the control unit sends a correcting pulse of a fixed duration to the motor controlling the speed of the slasher. If, after a preset interval, the moisture content has not returned to this desired value, another correcting pulse—still of a fixed duration—is sent. This is repeated until the desired regain is re-established. On high-speed slashers this means that a lot of yarn races through the machine before the control unit can effect the proper regain.

With the DPP unit in the *Moist-O-Graph IV* system, correcting pulse signals to the motor are of a *duration directly proportional to the magnitude of the deviation* from the desired moisture content. The control unit quickly adjusts the slasher speed before any appreciable amount of yarn goes by. The desired per cent regain is held for practically the entire run.

For specific details on how the new *Moist-O-Graph IV* Control System can improve *your* high-speed slasher operation, contact your nearby Honeywell textile field engineer. He'll be glad to examine your production requirements, make detailed recommendations, and provide supervision for the complete control installation to ensure optimum performance. MINNEAPOLIS-HONEYWELL, Wayne and Windrim Aves., Phila. 44, Pa. In Canada, Honeywell Controls, Ltd., Toronto 17, Ontario.

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She uses a FOSTER MODEL 506 Automatic Winder

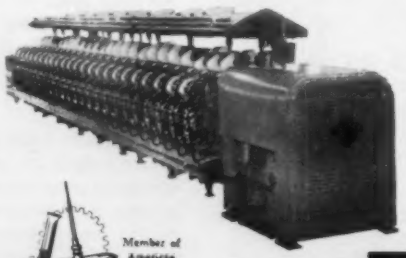
Yes, it has been substantiated and documented in mill tests under production conditions that the Foster Model 506 Automatic Winder will increase operator's production by 50%. Small wonder, since the Model 506 runs at twice the winding speed of our manual winder.

AND MODEL 506 CONES ARE OF CONSISTENTLY HIGH QUALITY — even better than Model 102 cones (standard for the sales yarn market for many years). That's because knot tying on the Model 506 is not entrusted to automation, which, in our experience, is bound, at times, to cause wild yarn, tangles, bobbin rings, crossed ends, uneven package density and rough yarn. Knot tying on the Model 506 is done by the operator with a standard high speed knotter, but it takes a mere fraction of a minute and permits her to test the knot at the same time.

AUTOMATION ON THE 506 includes threading up, slubbing, cleaning, disposal of empty bobbins, gauging full cones, donning full bobbins and doffing empty bobbins. None of these operations are a potential threat to yarn or package quality, as is automatic knot tying.

OTHER ADVANTAGES OF THE 506 are as follows: — requires less floor space than our manual winder with same capacity; winds any type of open wind putup, including a steep taper (9° 36') knitting cone; investment required is no more than for our manual winder with same capacity.

GET THE COMPLETE STORY on the 506. Send for our 506 brochure. No obligation.



Member of American Textile Machinery Association

MODEL 506

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Big win—and hottest news in textiles:

Depreciation Speed-Up

A SPEED-UP in the depreciation schedule for textile machinery was announced October 11 by President Kennedy. According to the announcement, the average useful lives suggested by the Internal Revenue Service for about 80% of textile machinery are now reduced from 25 years or longer to 15 years—in some instances, in fact, to 12 years (table at right).

The new depreciation rules became effective immediately upon announcement by the President.

Here's what the new machinery write-off schedule means:

- **A cut of some $25-million** a year in the textile industry's tax bill, according to U. S. Treasury Department spokesmen.
- **An almost immediate speed-up** in the textile industry's modernization program. (In 1960, the industry's capital expenditures totaled $530-million, over $400-million of which was for modernization and replacement of machinery and equipment. In 1961, totals were running only a little less up to the time of the announced revision of write-off schedules.)
- **A quick release** of some depreciation funds set aside this year but not yet spent.
- **Wider utilization** of technological breakthroughs just now available or on the threshold of availability.
- **A new incentive** for textile machinery makers to develop new technology and new machines, confident that textile manufacturers will have the money to invest in the products growing from accelerated research and development.

In general, preparatory, spinning, and weaving equipment can now be depreciated over a 15-yr. period; dyeing and finishing equipment, written off over a 12-yr. period.

Specifically, under the new write-off rules a company that buys $100,000 worth of looms and depreciates them on a straight-line basis over 15 years may deduct $6,667 a year—two-thirds more than the $4,000 per year it could deduct under the old rules.

Taken another way, the same company, using the new write-off schedule and the sum-of-the-digits method of depreciation accounting (permitting a write-off of about two-thirds of the cost in half of the useful life of the equipment), now needs only 7½ years to recover

How the New Rates Compare With the Old

	Depreciation Period	
	Old Rate (Years)	New Rate (Years)
PREPARATORY, SPINNING, AND WEAVING MACHINES		
Opening, blending, feeding	30	15
Cards	40	
Combers	25	
Drawing frames	25	
Roving frames	25	
Spinning frames	30	
Twisters	15–25	
Winders	25	
Slashers	25	
Looms	25	
FINISHING EQUIPMENT		
Cotton bleaching, washing, drying, dyeing, and dry finishing	15–20	12

How the Textile Industry Spent Its Depreciation Dollars 1956-1960

(For $'s, add 000,000)

	1956	1957	1958	1959	1960
Retained earnings	$139	$77	$74	$288	$189
Depreciation charges	$304	$321	$320	$293	$306
Total: retained earnings and depreciation charges	$443	$398	$394	$581	$495
Total: capital spending	$465	$408	$288	$412	$530
Spent for modernization	$442	$302	$236	$346	$408
Percent of total spent for modernization	95%	74%	82%	84%	77%
Modernization spending: percent of retained earnings and depreciation charges	100%	76%	60%	60%	82%
Total capital spending: percent of retained earnings and depreciation charges	105%	103%	73%	71%	107%

Source: McGraw-Hill Department of Economics

$66,667 of its $100,000 investment. Under the old schedule, the company needed 12½ years.

In addition to the shorter average estimated lives for newly acquired machines, mill owners can also make adjustments to the remaining useful lives of machines and equipment now in place. The Treasury Department explains that this can be done by applying depreciation rates based on the revised useful lives to the applicable basis, reduced by salvage wherever appropriate. But with respect to machines having a remaining useful life of 5 years or less, the Treasury will permit an adjustment only if a shorter useful life can be substantiated.

In making his announcement October 11, the President said that the result of the depreciation speed-up will be "of significant help to the industry in enabling it to modernize, meet foreign competition, and provide jobs." He said it was clear that "the administrative guidelines for the period of years over which depreciation should be spread are no longer appropriate in view of changing economic conditions."

The President continued: "The industry is experiencing a major technological breakthrough in which advancing techniques engender further advances and make even recently developed equipment economically outdated before it is physically worn out. The pressure for the adoption of technological innovations is accentuated by competition of foreign producers who, in most cases, enjoy the advantages of very liberal depreciation allowances as well as low wage costs."

The Treasury's review of industry practices in depreciating its equipment was made in compliance with President Kennedy's directive of May 2, in which he laid down a seven-point program designed to give fairer treatment to the textile industry. The Treasury's activities included independent studies by engineers of the Internal Revenue Service, inspection trips to several mills and to the plants of textile machinery manufacturers, and an evaluation of data presented by the industry regarding technological advances.

The Administration's action also reflects a series of meetings between officials of the Treasury and representatives of the industry, including the American Cotton Manufacturers Institute and the American Textile Machinery Association.

The Treasury studies gave consideration to rapid technological advances of the past 2 or 3 years and to further advances to be expected in the very near future.

Some quarters see in the Administration's action a brand-new approach to the useful-life concept. Average useful life up to now has meant the physical life of the machinery. The new approach, in the language of the President's announcement, is to measure the economic life of equipment rather than its physical life.

OPINION ASKED AND RECEIVED

Within hours after President Kennedy's announcement of the new write-off schedules, TEXTILE WORLD telegraphed textile industry leaders, textile machinery manufacturers, and other observers closely associated with the industry. The telegrams asked how these men appraised the impact of faster depreciation on the textile industry. Replies to these telegrams are published on the following pages.

In a nutshell, here is how the replies added up:

Some respondents saw the new rules as only a first step in the fulfillment of President Kennedy's seven-point program announced last May and as a sure sign that his other promises would soon be fulfilled. Others felt the new write-off schedule did not go far enough—the write-off time should be much shorter. Still others—a small majority—felt it would do no good at all until and unless the government acts promptly in other directions as well—a curb on textile imports and an adjustment in the cotton-export subsidy.

Mostly, though, reaction was favorable—even enthusiastic in some quarters. The vast majority of respondents saw a bright, solid future ahead—a stronger and more stable textile industry, more and faster technological breakthroughs, and a better break for the textile industry's customers.

To see in detail what respondents said in reply to TEXTILE WORLD's telegram, read on.

How Textile Men See the New Rates

No overnight revolution—Erwin

The President's action is very encouraging. It is additional evidence of the Administration's concern with the problems faced by the textile industry, and shows a willingness to seek reasonable solutions.

The more realistic depreciation schedules are a move in the right direction. They narrow the advantage of foreign competitors, who have enjoyed substantially more generous depreciation allowances. Machinery manufacturers will be stimulated to step up their research efforts. With additional cash flow, progressive textile manufacturers will be encouraged to increase their equipment purchases and thereby increase their efficiency.

In the enthusiasm over this development, it would be a mistake to assume modernization problems will vanish. More liberal depreciation schedules will not generate sufficient cash to revolutionize the industry overnight. There's a lot of catching up to be done. And this will take both time and money. Some of the money must come from sources other than depreciation.

In recent years we at Dan River Mills have spent all the funds we could make available for better machinery and equipment, with such expenditures having totaled almost $30-million in the past five years. We plan no change in this policy. If the new depreciation schedules yield additional funds—and we certainly anticipate they will—we plan to devote those additional funds to modernization of our plants.—*W. J. Erwin, President, Dan River Mills, Inc., Danville, Va.*

Action still needed—Sanders

The recent action on the life of textile machinery will be very helpful in generating the cash flow that is necessary for modernization. Modernization is not a choice but a necessity for survival.

Until the textile industry receives concrete action on the other points in the seven-point program proposed by the President on May 2, many companies will have serious problems to make enough profit to cover the accelerated depreciation to make a better cash flow.

We must have some one recognize the urgency of the President's statement on May 2, "It is time for action." It seems reasonable that six months should have produced more concrete action after a simple directive had been issued. It will take time to work out all the import quotas, but action should and could have been taken on the gross inequity of raw-materials cost before now. Since our government is paying the bill on the 8½¢ per pound export subsidy on cotton, it is certainly reasonable to require that an import fee of a similar amount be imposed on any cotton textiles imported into our country. This one action would be immediate help to our entire industry.

We must continue to fight to convince some at high levels that it is not in the best interest of America to use the taxpayers' dollars to sacrifice the textile industry on the altar of free trade by giving new and modern plants to our foreign competition and then subsidizing American cotton to them at 8½¢ per pound less than the American spinner can buy it.—*R. D. Sanders, Executive Vice President & Treasurer, Morgan Mills, Inc., Laurel Hill, N. C.*

Injustice corrected—Lowenstein

I was very glad to see the President's announcement providing for a faster write-off of textile machinery. This revision, which is long overdue, is, I feel, in the interest of our country as well as our industry.

It is important to recognize that we are not dealing with a subsidy or handout. The President's action simply corrects the injustice of unrealistic depreciation rates that we have had to live with for many years.

The announced changes do no more than properly adjust rates to the realities. Many foreign countries have done and are doing much more. Many foreign countries have depreciation provisions similar to our 5-yr. emergency war write-offs. Some Latin American countries permit a write-off of 50% of new plant and equipment cost in the year of acquisition.

The government's action is a very real step—but

only one step—in the direction of enabling us to compete with unfair foreign competition, which has the cost advantages of slave-labor wage rates, lower cotton cost, fast depreciation, and in many cases direct subsidy.

The ability of American industry to keep its plants in first-rate competitive condition is essential to the preservation of American jobs and our ability to keep ourselves strong economically. If we are not strong economically, we can not be strong militarily.—*Leon Lowenstein, Chairman, M. Lowenstein & Sons, New York.*

Encouraged . . . but—Smith

We are encouraged by this first step in Mr. Kennedy's seven-point program.

As we all know, however, increased depreciation is of no value whatever to any company that is not operating at a profit. The present Administration has increased the cotton cost of Avondale Mills $20 a bale, which amounts to $3,600,000 per year. The Japanese quota has been increased from 247- to 275-million yards. The export subsidy on raw cotton has been increased from 6¢ to 8½¢ a pound, and no action has been taken in respect to an offset import fee to prevent yarn and heavy gray cloth from entering this market purely because of the advantage the foreign mill now has in respect to its raw material cost.

When proper government action is taken to control the import of cheap foreign textiles, the more liberal depreciation schedule announced last week should be of substantial value to our industry. Unless proper action is taken on these additional points, the increased depreciation scheduled will be about as useful to us as a .22 rifle to a 22-day-old baby.—*J. Craig Smith, President & Treasurer, Avondale Mills, Sylacauga, Ala.*

Modernizing eased—Stanton

President Kennedy's announcement of the liberalization of depreciation rates for textile manufacturing machinery is a step in the right direction and should prove encouraging to the industry. The value to individual mills will undoubtedly vary depending upon the policy each mill has previously followed.

Bulletin F, issued by the Treasury Department in 1942 establishing lives for cotton manufacturing machinery from 25 to 20 years, has been revised in many instances by the inclusion of an obsolescence factor based on the individual mill's experience over the years. Certain mills have also been using the double-declining method of depreciation, which has speeded up the amount taken during the early years, tapering off in later years as the planned-for replacement draws near.

In spite of the variations, however, most mills in the industry have undoubtedly been obliged to base their depreciation on longer than the newly proposed 15-yr. life for textile manufacturing machinery and 12-yr. life for finishing equipment. As a result, under the new method depreciation will be greatly increased and mills in general, assuming that they are able to earn the new depreciation rates, will be in a much better position to modernize their equipment than was formerly the case.

It must be remembered that depreciation is a basic element of cost, however, and the new depreciation rates will increase the mill cost of manufacture substantially. The increase in cost due to higher rates of depreciation, plus the increased cost for new-crop cotton, means that the present low prices for cotton goods cannot be maintained and must advance to considerably higher levels in the very near future.

The fact that President Kennedy has taken this action to correct an injustice that has existed in the industry since 1942 is very encouraging and appears to indicate his continued determination to carry out the 7 points of the program of assistance to the textile industry that he announced in May 1961.—*Seabury Stanton, President, Berkshire Hathaway Mfg. Co., New Bedford, Mass.*

Fewer changeovers ahead—Frierson

Recognition by the Treasury Department that the schedule for useful life of textile machinery is antiquated is most heartening and long overdue. This action will encourage and strengthen our whole economy because of the size of textile employment and the broad effect of textile expenditures.

In 1960, approximately 19-million cotton-system spindles operated over 6,000 hours. In 1925, the approximately 38-million spindles operated only 2,900 hours. No appreciable change has been made in the anticipated useful life for depreciation purposes during this period.

The comparatively new industries established since 1925 now account for the major portion of industrial volume, and generally speaking, the useful life span of their equipment for depreciation purposes is between 5 and 15 years.

It is reasonable to expect many and varied improvements in textile products, procedures, and equipment as a result of the added funds generated for replacement and modernization purposes from the new equitable depreciation allowances.

Research and development efforts at all levels from finished products to production machinery will be stepped up substantially. Such efforts have been limited in the past, because of the difficulties of financing in the industry, with low cash flow resulting from antiquated depreciation policy.

In recent years machinery improvement programs have been heavily weighted in favor of changeover of

existing equipment as against the purchase of new equipment because of the more favorable depreciation treatment. A reversal may now be expected.

In my opinion, the textile industry's expenditures for new equipment in the next five-year period will considerably more than double those of the past five years.—*J. Burton Frierson, President, Dixie Mercerizing Co., Chattanooga, Tenn.*

Obsolescence recognized—A. C. M. I.

The Board of Directors of the American Cotton Manufacturers Institute is encouraged by the Administration announcement October 11 of a revised depreciation schedule on textile machinery as the first concrete implementation of the President's 7-point textile program.

We reaffirm our belief that the remaining six points in the President's program must be implemented promptly to improve the competitive position of the United States textile industry. We recall the President's statement when he announced his 7-point program on May 2 that "it is time for action."

The new schedule recognizes for the first time the obsolescence factor in textile machinery and also the fact that the textile industry is on the threshold of major technological breakthroughs. Present and subsequent technological innovations in textile manufacture will require continuing review of the depreciation schedule and shorten lives of existing equipment.—*American Cotton Manufacturers Institute, Washington.*

Handicaps offset—Robertson

The liberalization of depreciation schedules on textile machinery will be of great assistance to the industry in maintaining efficiency and in competing with goods made in other countries. Marginal machinery can now be replaced with less concern that the machine will become obsolete before it is charged off.

The new schedules and the 1954 provision for the double declining balance method of calculating depreciation make it possible for a mill to get its machinery investment back in less than half the years required before these changes became effective. The change, long overdue, recognizes the pace of current technological developments in textile machinery.

It is heartening to the aggressive but hard-pressed textile industry that this Administration recognizes its problems and is committed to help create a healthier climate for its operations. The Administration's support of the industry position in placing a lid on the volume of imports from low-wage countries, the statement of a Cabinet officer that the Administration favors an equalization fee on imports of cotton cloth and garments, and the recognition that depreciation rates have been inadequate—these go a long way to offset the handicaps under which the textile industry has been operating. This change will help to provide full employment, the highest possible operating efficiency, and a reasonably priced supply of textile products to the consumer. — *Julian Robertson, President, North Carolina Finishing Co., Salisbury, N. C.*

Another incentive—Lanier

The higher depreciation allowable to the textile industry under President Kennedy's announcement should result in a stronger domestic industry. While this move does not lessen the necessity for adequate protection against imports, nevertheless this measure does put the domestic industry in a stronger position to compete in the world textile markets.

West Point Manufacturing Company has always followed the policy of adequate spending for modernization and growth, and this new measure provides another incentive to pursue these ends.—*J. L. Lanier, President, West Point Mfg. Co., West Point, Ga.*

How the New Rates Look to Machinery Men

Easier to modernize—Howe

The new depreciation schedule for textile equipment announced by President Kennedy is significant.

It is of immense help to an industry that has clearly shown it deserves help in overcoming serious competitive problems that are not of its own making. It strengthens conviction that other points in the program to aid textiles will get speedy and affirmative action. Thus the industry can face the future optimistically, with confidence that it will find it easier to modernize its facilities and so help beat foreign competition and improve operating margins.

The more-than-50% increase in the allowed depreciation rate for weaving machinery under the new announcement will lead to new business for Crompton & Knowles. This faster tax write-off substantially reduces the time needed to recover cash invested and consequently will place our customers in a greatly improved position to buy our machinery.

This action on textile depreciation rates may be the forerunner to modifications in other industries. This in turn should stimulate the entire economy of the United States. This country has not been expanding at the rate of other industrial countries in the world, and our government's depreciation policies, in the

main unrealistic, unquestionably have played a part in this lack of national growth. A sound and growing national economy, in turn, will help textile demand.—*Frederic W. Howe, Jr., Crompton & Knowles Corp., Worcester, Mass.*

Expect higher demand—Connor

The announcement this week by the Internal Revenue Service of the revision of Bulletin F, as it applies to textile machinery to bring it more into line with today's conditions, is welcome news to everyone connected with our textile industry.

The United States mill man has been battling foreign competitors with his hands tied behind his back by governmental restrictions. This action frees at least one of his hands by helping him to modernize his mill with the increased cash flow that will result from the faster depreciation of his machinery.

It is to be hoped that further action will be taken on other governmental restrictions so that the American mill man will be able to compete on a more even basis for the textile markets in the United States and the rest of the world. There have been startling achievements in recent years in the design and development of textile machinery. Too often, our United States mill men have had to forego the purchase of this new equipment, which would have put them in a much better competitive position by lowering the cost and increasing the quality of their product, because they did not have the funds available.

We at Foster expect an increase in demand for our latest winders and are already planning the necessary steps to increase production.—*Edward C. Connor, President, Foster Machine Co., Westfield, Mass.*

New schedule helpful—Craig

I do not see that the new depreciation schedules will make a great difference as far as our company is concerned. We have always built rugged machinery. For example, the first stainless-steel equipment we built 22 years ago is still in service and operating daily. In fact, a few installations of our old cast-iron equipment are still in operation after 40 years, though most such installations have been replaced by stainless steel equipment.

It seems, therefore, that the average mill will operate dyeing equipment as long as it gives good service, even though this usually goes well beyond the 20-yr. depreciation period.

On textile equipment other than dyeing equipment, I can see that it would be quite an advantage to a manufacturer to depreciate equipment in 12 to 15 years. The very fact that more textile products are made today with far fewer spindles in place is a good indication that quite a bit of progress has been made in preparatory, spinning, and weaving machinery. In these areas I am sure that the new depreciation schedule will be quite helpful.

I do not mean to imply that we have not made some advance in dyeing equipment. But most of the improvements can be added to existing machinery.

In the area of drying equipment there has been a real revolution in the past three or four years.—*Ray P. Craig, Vice-President, Gaston County Dyeing Machine Company, Stanley, N. C.*

Progress in longer steps—Cocker

We cannot fight today's wars with World War II equipment nor can we meet today's competitive situation with obsolete machinery. This is the situation our mills have been facing.

The new depreciation schedule is a step in the right direction but it is not carried far enough. It should be shorter and apply to more industries.

With specific reference to the textile industry, the new schedule should aid mills in replacing obsolescent equipment and thus enable them to meet foreign competition and the tremendous cheap labor differential on a little more equal basis. This need for new equipment is not dictated just by competition but also by the rapid development of new fibers, techniques, and product requirements.

The schedule should also prove to be an incentive to the machinery builders in developing in longer strides more efficient and more productive equipment, knowing mills will be able to replace machinery at a faster rate.

It is a tremendous credit to the American mill man to have accomplished what he has in the face of these conditions of obsolescent equipment (for the most part) with which he has had to work. The American public is the ultimate beneficiary of this new schedule and stands to benefit even more in the future.—*John Cocker III, President, Cocker Machine & Foundry Co., Gastonia, N. C.*

Abandon mediocrity—Hubbard

The news of stepped-up depreciation schedules was received with elation by the entire American textile machinery industry, and Saco-Lowell certainly shares in this response. There is no doubt but what the new schedules will serve as a very positive catalyst to sales of capital equipment.

As yet it is entirely too early to point out any specific order that may be attributed directly to this accelerated schedule. However, we know for a fact that a substantial portion of our present backlog (which, incidentally, is at a new high for the year) would not have been booked if it were not for a conviction on the part of our customers that some concrete action was in the offing.

In discussing the new schedules with mill executives,

it becomes quite apparent that they, too, are gratified with the action taken by the President both because of the obvious fiscal advantages as well as because it represents the first implementation of the President's 7-point program.

On the other hand, an alarming comment made by one official was to the effect that the "more progressive" mills would be the ones that would really exploit the advantages. If exploitation is confined to the "more progressive" mills, then the American textile industry is little better off than before. To survive, the industry as a whole must drop the mantle of mediocrity and take up the role of progressive.—*J. W. Hubbard, Vice President, Saco Lowell Textile Machinery Div., Saco Lowell Shops, Easley, S. C.*

Sound step forward—Hildick

The new depreciation schedule will unquestionably increase our sales of dry-finishing machinery to textile mills. The major portion of our sales is made to mill organizations in a sound enough financial position profit-wise to take advantage of this accelerated depreciation plan. Also, by being able to charge off more per year per machine, they will receive back more cash faster to conduct mill operations in a highly competitive world-wide market.

Certainly many more mills may now take advantage of changing from 40- to 50-in. width looms. Such a procedure is bound to result in more sales for the entire textile machinery manufacturing industry.

In our particular field of dry-finishing machinery manufacture, we known a great many mills are now operating Curtis & Marble machines that have been entirely written off some years ago. Because of the 20-yr. depreciation plan, these mills have hesitated to invest in new machines, simply because it would tie up needed working capital for so long a period of time. The reduction to 12 years will, I believe, make the purchase of our machines more attractive.

We are at present making every effort within our means to find and produce machines to substantially improve and automate the dry finishing process as we know it today. The fact that our government has at last recognized the importance of major technological breakthroughs in textiles to stimulate our own economy and meet worldwide competition is a sound step forward towards a continued prosperity for the people of our country.—*Walter E. Hildick, President, Curtis & Marble Machine Co., Worcester, Mass.*

Stimulates to modernize—Leeson

The fact that depreciation is a major source of business funds for investment in machinery and equipment points up the value of the contribution made by the Treasury Department's decision to increase depreciation allowances for textile machinery. In reaching its decision, the Treasury has now given recognition to the significant technological advances in textile machinery which began appearing about five years ago. We hope that further study of the obsoleting effect of new types of machinery now available will induce the government toward even more liberal depreciation.

The availability of extra funds created by higher depreciation charges will provide a stimulus to mill modernization and expansion.

In recent years a high fraction of our sales to the textile industry has been newly developed automatic and higher-speed machines that provide substantial cost savings to the user. We expect that, through the extra depreciation funds now available to the industry, mills will broaden their usage of machines such as Unifil loom winders and Uniconer automatic coning machines and hence reduce their manufacturing costs in order to be competitive in the markets.—*Robert Leeson, President, Lessona Corp., Providence, R. I.*

More buying capacity—Bolton

The recent announcement of 15-yr. depreciation rates will be applauded by the United States textile industry and the textile machinery manufacturers.

The textile industry is a large and vital part of our economy. Its machinery hasn't been kept modern and one of the principal reasons has been the low depreciation allowance permitted in the past.

The first effects of the new 15-yr. depreciation schedule will be an improvement in the industry's capacity to purchase new equipment. Individual mills will find themselves in a better position to make capital investments. A beginning can be made on accelerating the modernization of an industry in which some 50% of its machinery is over 30 years old.

As the largest supplier of textile machinery to the United States textile industry, we at Whitin look forward confidently to an increase in machinery orders for the new high-production equipment the United States textile industry needs and must have to maintain its position in competition with the textile industries of other countries, both in United States and export markets.—*J. Hugh Bolton, President, Whitin Machine Works, Whitinsville, Mass.*

Right. But far enough?—Child

Reduction in the schedule of useful lives determining the tax write-off period for textile machinery should not be considered a special favor, bonus, subsidy, or handout to the textile industry. Taxpayers are rightfully entitled to the recovery of capital cost before taxes and while the present move is in the right direction, there is a serious question as to whether it has gone far enough.

Please note that this step toward realistic depreciation is distinguished from incentive depreciation as

practiced by almost every other industrialized nation of the world. Recent comparisons with seven of these countries—Japan, United Kingdom, Sweden, Italy, Canada, France, West Germany—indicate that the United States was at the bottom of the list when considering the percentages written off over the first service year or even over the first three years.

Though this new change leaves us still behind foreign competition, it should be a stimulant to the textile industry, and to the general economy.

The initial effect for the textile industry should be an increase in cash flow. This means that the industry will be paying a fair and proper tax on income and not on capital, as in instances in the past, where earnings have been overstated because of the understatement of depreciation. The principal culprit here is inflation. The dollar of depreciation is worth only half to one-third of what it should be. Faster capital recovery will increase the rate of modernization. It reduces the risks involved. It paves the way for easier financing of capital equipment. The result will be lower costs and an improved competitive position for the mills.

Since studies indicate that the liberalization of depreciation increases the incentive to invest, informed management will be quick to take advantages of these new opportunities. Added business should result for the textile machinery industry. This will lift its lagging rate of operation, call for increased employment, prove a strong stimulant to research, and increase the flow of new and improved products.

We know that there is a definite relationship between the rate of investment in new and better capital goods and the rate of economic growth. Canada may be considered an example: The liberalization of depreciation schedules there in 1946 and 1949 stimulated business to the point where it was possible to reduce corporate income taxes. The most efficient machine results in the lowest unit cost and, therefore, tends to be anti-inflationary. This definitely is in the interest of the consumer. Also, American labor will be less vulnerable to having its jobs exported.—*W. K. Child, Executive Vice President, Draper Corp., Hopedale, Mass.*

Step long overdue—Harris

Liberalization of the textile machinery depreciation schedules is a long overdue step in the right direction. Although it is no panacea for all problems of the industry, including low-cost foreign imports, it definitely provides another strong inducement for mills to modernize—and modernize they must, not only to maintain the general health of the industry, but to compete and continue in existence.

The industry is experiencing major technological breakthroughs at such a rapid rate today that even recently installed equipment is economically outmoded long before it is worn out. Only through rapid depreciation can the needed funds be generated to help acquire new cost-saving machinery and methods.

The increased rate at which the cost of capital improvements can now be recovered, and the resulting improved climate for financing, should certainly appreciably benefit the sale of current and future Pneumafil products. This not only encourages us to persist with our already sizable research and development program to provide modern, cost-saving equipment for the textile industry, but to redouble the efforts going into this program.—*C. R. Harris, President, Pneumafil Corp., Charlotte, N. C.*

Old base not realistic—Meadows

It is certainly gratifying to know that the Federal Government, through President Kennedy's announcement of October 11th, is finally giving some consideration to the forgotten industry. I think we all know the old 25-yr. depreciation basis is unrealistic in this day and age and has worked a definite hardship on the textile industry.

It is our thought that the depreciation life of textile machinery could be reduced to 10 years without any loss of revenue to the federal government. We base this on the fact that with modern machinery the textile industry would be in a position to earn better profits which, of course, would be taxable. The effect on the textile machinery builders would be a greater volume of business and higher profits on which to pay taxes.

We definitely feel this is a step in the right direction and will benefit the textile industry and the machinery builders and will contribute to the economic well-being of our country.—*E. D. Meadows, President, Meadows Mfg. Co., Atlanta, Ga.*

Increased cash flow—Schwartz

The United States textile industry, as a world leader for years, has recently found itself falling short on the requirements of the American market in new fabrics and lower prices and the international market in technological advancement. The sharp decrease in foreign markets and the tremendous competition of foreign textile imports have made its position critical. The textile industry must have the means for a rapid technological advancement, and this is possible only by an increased cash flow.

President Kennedy's announcement lowering the depreciation period for textile machinery to 12 or 15 years is one major step in this direction. The new schedule will increase the textile industry's ability to buy new and advanced machinery now available for textile manufacture in greater capacities and at lower prices.

The textile machinery producers of the United States must, themselves, have greater opportunities for sales in order to finance the research and development

necessary to further our textile industry and meet the challenge of foreign machinery manufacturers. As the textile industry moves forward by the purchase of modern machinery, the machinery industry through its sales can finance even greater machine developments to the benefit of these two industries and the benefit of the American public. New designs for advanced machinery in our company's engineers' minds and on our drafting boards can then quickly become a reality.—*P. Kay Schwartz, President, Proctor & Schwartz, Inc., Philadelphia.*

Multimillion program—Whitehurst

Reduction of amortization time on textile machinery from 25 years to 12 to 15 years will permit the replacing of a considerable amount of obsolete machines and improved processes that will make better quality, with greater efficiency at less expense.

We believe the speed up of write-off time will encourage the textile industry to launch a multimillion-dollar program of accelerated modernization that is badly needed to enable this industry to compete more favorably in world markets comparable to other large industries of our nation, who have made greater modernization progress than our textile industry has because of its many complexities and because it has not been given the consideration that other industries of our nation have heretofore.

The textile industry is one of the oldest in the nation and it has made more progress in the last 10 to 15 years than it had in 50 years prior to the middle 40's without any assistance from other sources. At the same time, many other industries have made greater progress through assistance through similar acts as above.

We believe the new depreciation schedules will encourage a tremendous expansion in our research and development in the near future that will have a profound impact toward an improvement of our economics, because it will have greater faith in the near future of our textile industry. We do believe that these new rates will boost our textile business.

Thanks to our President for extending a lifeline to our industry.—*Joe R. Whitehurst, President, Ideal Industries, Inc., Bessemer City, N. C.*

What the Industry's Friends Say

Fresh look at operations—Werner

Revision of the depreciation schedule has provided manufacturers of textile machinery and textile products with tangible evidence of the Administration's understanding and support of textile industry problems. Thus, in a new climate of confidence, they can now exert their initiative and imagination in creating a sounder, more modern, and more profitable industry.

In our judgment the measure will tend to:

1. Stimulate machinery manufacturers to increase their research and development efforts to create truly automated production and control equipment.
2. Provide incentive to other equipment manufacturers not now serving the textile industry to bring advanced technological know-how to bear upon textile problems.
3. Accelerate the liquidation of marginal mills.
4. Increase productivity and reduce relative labor cost per unit produced.
5. Strengthen the competitive position of textile manufacturers *vis a vis* foreign competition.

The new depreciation schedule, however, provides only a point of departure in planning better profit margins for textile mills. Any sound equipment modernization program must be based on a sound marketing strategy. Obviously, we must acquire new equipment not only to produce things at lower cost but to produce things that can be sold. Therefore, our marketing strategy—designed to get the right product, to the right market, at the right time and at the right price—must be the foundation of our future equipment planning.

There is an increased awareness on the part of mill owners in forward and long-range planning. This will include a fresh look at their total operations with a view to improving their company's competitive position through re-appraisal of production costs, current and potential machinery and equipment utilization, introduction of scientific controls and servo-mechanisms, etc.

In addition, the new measure will also cause action among service industries active in the textile economy. For instance, companies specializing in leasing of equipment are likely to expand their business activities. Banks and factors will revise their ways and means for financing machinery and equipment purchases and will attempt to meet the needs for term borrowing by mills in need of rehabilitation and modernization.—*Jack C. Werner, President, Werner Textile Consultants, New York City.*

Breakthrough in thinking—Pastore

President Kennedy's recent announcement of a revised depreciation schedule for the textile industry is an important step forward. It implements recommendations that were made in the two reports issued by the Senate Textile Subcommittee, of which I was chairman, designed to strengthen the long-run position of domestic producers of cloth.

In the past, Bulletin F, the Treasury Department's

guide to depreciation allowances for tax purposes, permitted tax write-offs based on the actual life of textile machinery. And some machines—textile cards, and opening and blending machines, for example—are very durable indeed. Under Bulletin F, cards had a tax life of 40 years, and the depreciation of opening and blending machines had to be spread over 30 years.

Now, however, these and may other types of equipment—about 80% of all textile machinery—can be written off in 12 to 15 years.

The concept of "useful life" on which the new depreciation schedules are based is an important breakthrough in our thinking about taxes. It recognizes that technological progress can make a machine obsolete long before it wears out. By incorporating the notion of technological obsolescence into the concept of "useful life" we have adopted a tax policy that will encourage many textile mills to install the latest equipment. The result of this should be an upsurge in textile productivity in the United States. And this we need badly if the domestic industry is to survive in the face of mounting competition from abroad.—*John O. Pastore, United States Senator (Rhode Island), Washington, D. C.*

Only a first step—Hayward

It is good to learn that more reasonable depreciation allowances are now to be provided and that President Kennedy particularly requested quick action for the textile industry. It would, however, be a mistake to assume that this action alone is sufficient to remedy the ills of the textile industry. While this is an excellent inducement to modernization, and modernization is required, profits must be available to purchase the machinery.

This new depreciation schedule can only be considered a first step in restoring the possibility that the textile industry, long indifferently regarded by government, is beginning to receive the consideration from government that it deserves because of its contribution to the nation.—*Bertrand W. Hayward, President, Philadelphia College of Textiles & Science, Philadelphia, Pa.*

Improved business ahead—Price

As a part of his program of assistance to the textile industry the President on May 2, 1961 said in part: "I have asked the Treasury Department to review existing depreciation allowances on textile machinery. Revision of these allowances . . . should assist in the modernization of the industry."

Pursuant thereto, the President on October 11, 1961 made public a revised schedule of depreciation allowances for textile machinery.

Previous depreciation schedules (Bulletin F) applicable to textile machinery were unrealistic in their assessment of the useful life of such machinery. As a result, textile mills and finishers have been reluctant to proceed vigorously with capital expenditures for desirable modernization. Some important plans in this direction have recently been tabled or deferred.

This new schedule opens the way for the American textile industry to go ahead with needed modernization plans, which will benefit the American consumer and the textile industry, employer and employee alike. It can also improve to some degree its international competitive position, which is of the essence. Textile machinery manufacturers and their employees can look forward to improved business.

In fact, the entire American economy will benefit from the President's concern for, interest in, and actions on behalf of the American textile industry.—*Hickman Price, Jr., Assistant Secretary, Department of Commerce, Washington.*

Highly gratified—Jordan

I am highly gratified at the President's action. It is long overdue, but it will be of considerable help.

While it is not as much as I think it ought to be, it will put us nearer the level of depreciation rates now in effect in many foreign countries, and it will certainly help us in our efforts to modernize our plants. — *B. Everett Jordan, United States Senator (North Carolina), Washington, D. C.*

Research boost coming—Dillon

Generally speaking, this move to more realistic depreciation rates should be welcomed by all technical people of the industry.

This first positive action by the federal government to aid the industry in its fight to compete on a world scale will undoubtedly accelerate modernization of American mills and stimulate development of new machinery and processes. All of this means a newly dynamic industry that will require increased research and development efforts within industry laboratories and in such institutions as Textile Research Institute. The need for well-trained scientists and engineers will probably also rise. Thus both the textile research man and the educator will be in positions to serve the industry in a way to challenge their talents and resources.

It may well be that existing research sources (i.e., trained scientists and laboratory facilities) will require a rapid expansion, which will justify federal government aid. This might take the form of a "matching funds" program to stimulate the growth and effectiveness of existing textile research institutions, with the ultimate aim of expanding the use of the research method within the industry itself.—*J. H. Dillon, President, Textile Research Institute, Princeton, N. J.*

Index Hits New High

TEXTILE WORLD's exclusive Index of Textile-Manufacturing Activity hit a new all-time high of 120 in September. And production is expected to move still higher in October. Since the recession low of 106 in January, the index has been rising fitfully, climbing for a month, then holding steady before rising again. Despite this capricious behavior, the rise to date has been faster than at any time since the index was initiated in 1954.

At least as encouraging as the excellent rise in production so far this year is that the industry is selling at an even faster pace than it is producing. The inventories-to-sales ratio (figures at right) is declining. This is a key point. The textile industry has been often plagued with inventory recessions in the past, and it is encouraging to see that the current production climb is soundly based on rising sales.

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The general business outlook, on which the textile industry is highly dependent, remains bright despite a slowdown in industrial production during September. Corporate profits have risen smartly since the beginning of the year, and that is usually a stimulus for business to expand capital spending. The gaudy spending programs coming out of Washington dominate the business news, and some of the total impact of such spending has already been felt. When the government lets contracts, private contractors swing into action, boosting employment and incomes. Payment is made later, and at that time the economy gets a further lift.

Figures of the Month

TEXTILE-INDUSTRY INDICATORS

	Latest Month	Previous Month†	Year Ago
TEXTILE WORLD'S Exclusive Index			
(chart above)	120	119	112
Employment (thousands)[1]	932.9	929.6	943.3
Production Workers (thousands)[1]	839.5	835.8	849.5
Weekly Earnings (dollars)[1]	66.50	66.26	62.05
Hourly Earnings (dollars)[1]	1.65	1.64	1.62
Weekly Hours Worked[1]	40.3	40.4	38.3
Production Index (1957=100)[2]	117	116	113
Wholesale Price Index (1947-49=100)[1]	94.4	94.2	95.9
Manufacturers' Sales (billion $)[3]	1.24*	1.24	1.20
Manufacturers' Inventories (billion $)[3]	2.72*	2.75	2.67
Inventories-to-Sales Ratio	2.19*	2.21	2.23
Exports (million $)[3]	144.6*	95.2	67.1
Imports (million $)[3]	121.6*	104.8	125.9
Stock Price Index (1941-43=100)[4]	30.85	31.14	26.10
Failures[5]	5	7	3

NATIONAL ECONOMIC INDICATORS

Industrial Production (1957=100)[2]	112	113	107
Consumer Price Index (1947-49=100)[1]	128.1	128.0	126.8
Wholesale Price Index (1947-49=100)[1]	118.8	118.9	119.2
Civilian Population (millions)[6]	181.7	181.4	
Unemployment (millions)[6]	4.1	4.5	3.4
Employment (millions)[6]	67.0	68.5	67.8
Personal Income (billion $)[3]‡	420.2	419.4	405.5

* August, otherwise latest month is September. † Revised. ‡ Annual Rate.

1. Bureau of Labor Statistics; 2. Federal Reserve Board; 3. Department of Commerce; 4. Standard & Poors; 5. Dun & Bradstreet; 6. Bureau of the Census.

NEWS and COMMENT . . .

Briefs at Home

A new conference on international trade in cotton textiles opened October 23 at Geneva. Purpose: to negotiate a long-term agreement that will become effective in 1963, after expiration of the short-term agreement reached last July. The U. S. delegation included members of the Departments of State, Commerce, and Labor plus (informally) textile-industry representatives.

Earlier, on October 16, Japan formalized an agreement (pursuant to the Geneva agreement last July) whereby it may export up to 275-million square yards of fabric to the United States in 1962. Directors of the American Cotton Manufacturers Institute, pointing out that this is a substantial increase in Japan's exports to the United States, asked Washington to reappraise the agreement in light of the fact that Japan is not in fact a "developing" nation.

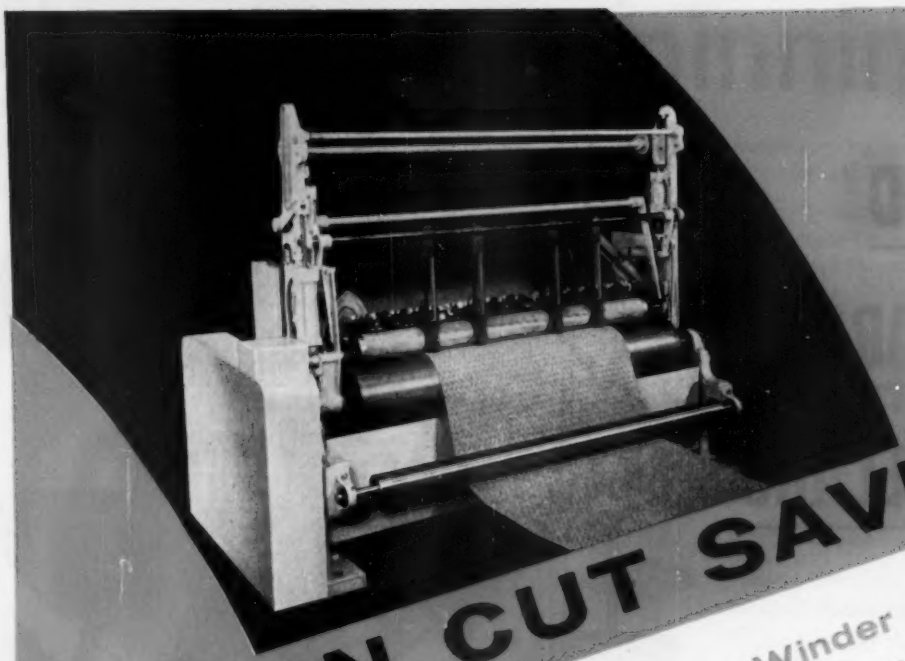
Meanwhile, the Office of Emergency Planning (taking over from the old Office of Civil & Defense Mobilization) closed the official record on its investigation of the textile industry's role and stature in national security. In the closing hours of the hearings textile-industry spokesmen claimed sizable losses in sales, earnings, tax payments, and payrolls because of imports and renewed their plea for a finding that the industry is essential to national security.

Commenting on the July agreement at Geneva, the Value Line Investment Survey observed that the overseas textile producer, knowing now that he can get only a limited share of the U. S. market, will lift his prices, because his main incentive for price cutting (i.e., higher sales) now is gone. For this reason, the Value Line expects a firmer price structure throughout the cotton textile industry. At the same time Francis I. du Pont & Co, dealers in securities, said textile manufacturers are headed for higher profits as the result of a recovery that has already begun.

Company Earnings

Company	Period	Sales ($1,000's)	Change From Year Ago	Earnings ($1,000's)	Change From Year Ago
Avondale Mills	Yr. to 8-31	$56,200	−7.4%	$2,317	+9.4%
Joseph Bancroft	Yr. to 6-30	30,529	+8.0%	1,132	+1.8%
Chadbourn Gotham	Yr. to 7-29	42,753	−4.7%	1,258	*
Collins & Aikman	Qu. to 8-26	22,467	+33.2%	724	+200%
Collins & Aikman	Hlf. to 8-26	39,482	+286.6%	1,112	+146%
Indian Head Mills	Qu. to 9-2	24,599	+242.4%	1,037	+32.4%
Indian Head Mills	9 mo. to 9-2	67,968	+34.4%	2,616	+18.6%
Kendall Co.	Qu. to 9-9	29,349	+17.2%	1,057	+4.8%
Kendall Co.	9 mo. to 9-9	82,089	+6.9%	2,986	−6.9%
United M. & M.	Yr. to 6-30	471,597	+0.9%	9,758	−31.9%
Van Raalte	9 mo. to 9-30	22,400	−7.1%	1,255	−17.8%
West Point Mfg. Co.	Yr. to 8-26	144,294	−8.3%	5,235	−35.9%
West Point Mfg. Co.	Qu. to 8-26	n. a.	—	1,936	n. a.
Wyandotte Worsted	Qu. to 8-26	n. a.	—	184	−3.9%
Wyandotte Worsted	9 mo. to 8-26	n. a.	—	279	−27.1%

* Net loss in year-ago period.



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Pellon Corp., Lowell, Mass.
Associated Dye & Print Co., Inc.
Paterson, N. J.
Bolta Products, Lawrence, Mass.
Canadian Celanese, Ltd.
Drummondville, Que.
Northern Dyeing Corp., Washington, N. J.
Cranston Print Works
Cranston, Rhode Island
Star Woolen Co., Cohoes, N. Y.
Allied Textile Printers, Inc.
Paterson, N. J.
Burlington Industries, Inc.
Greensboro, N. C.
Vanity Fair Mills, Inc., Monroeville, Ala.
H & F Binch Co., Glens Falls, N. Y.
The United Piece Dye Works
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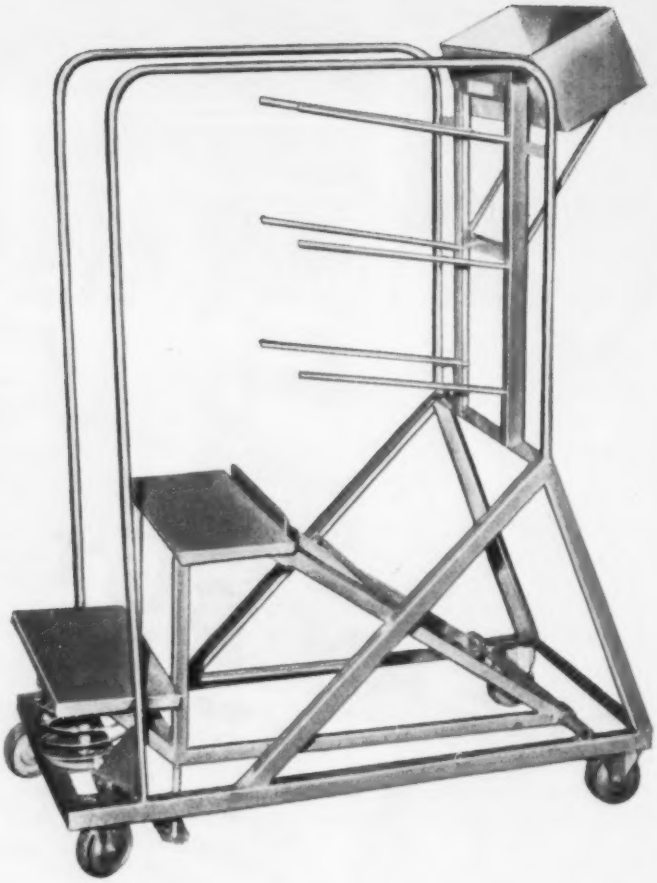

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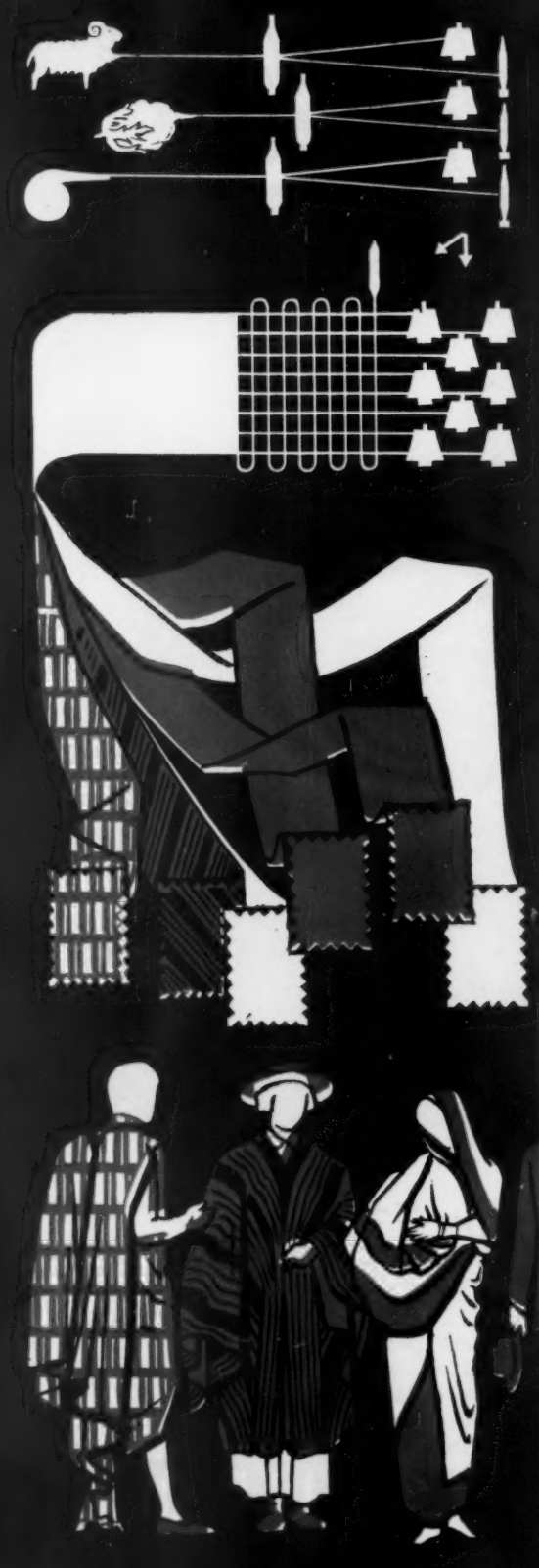

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Also, consider the reduced maintenance with sealed oilless bearings . . . a full length roller beam that protects against lint . . . and removable, easy-to-clean 7-unit spindle separators. These and still other improvements make the Number 512 the most advanced Ring Twister for all types of yarn. Find out how it can benefit your mill. Contact your nearest Leesona Sales Engineer for the new brochure containing full details, or write LEESONA CORPORATION, Providence 4, Rhode Island.

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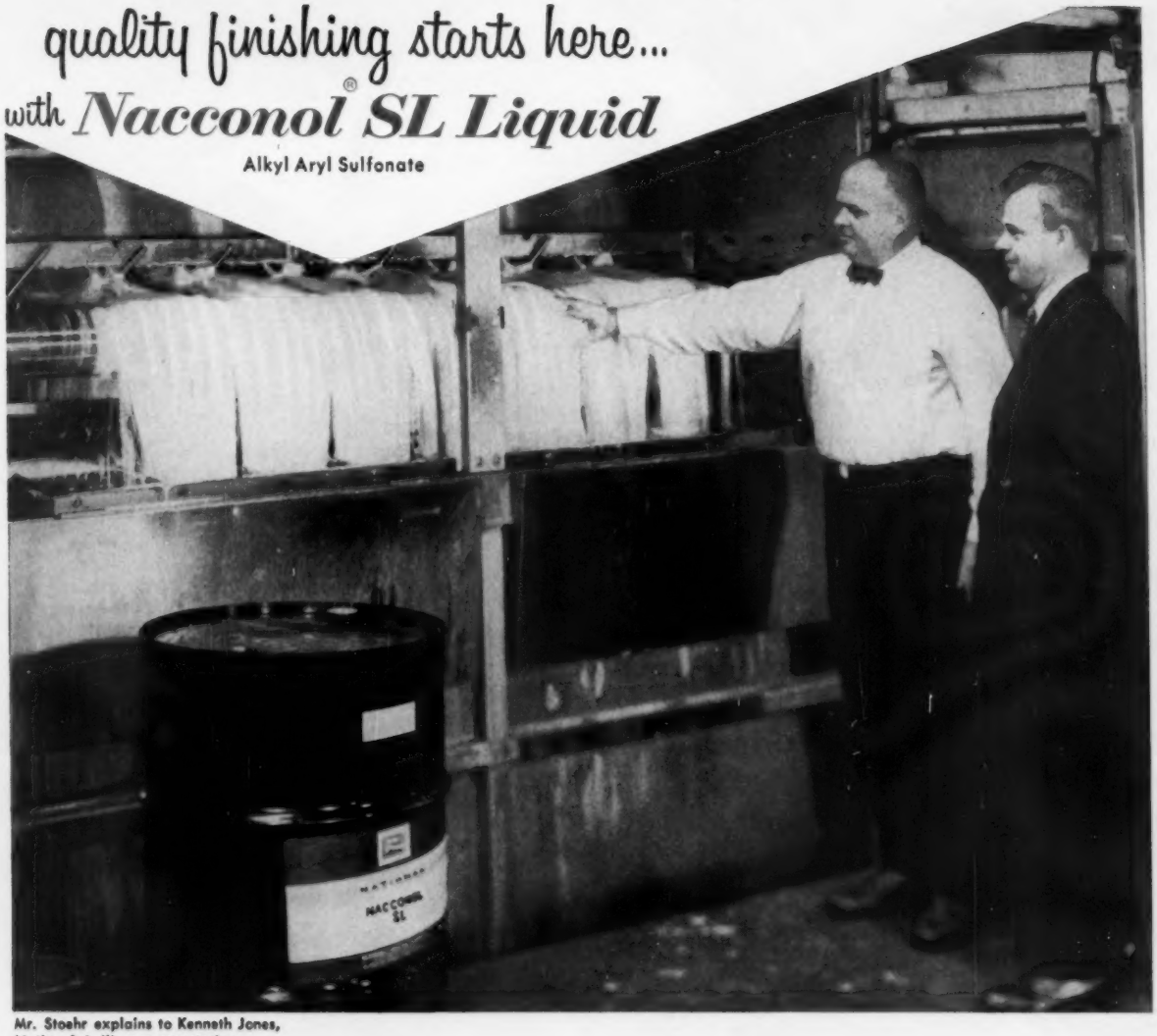
The Number 512 proves again . . . *Leesona leads . . . to better fabrics*

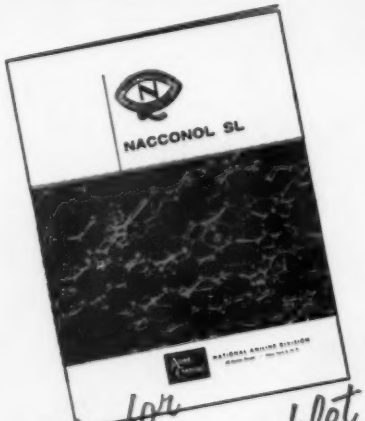
quality finishing starts here...

with Nacconol® SL Liquid

Alkyl Aryl Sulfonate



Mr. Stoehr explains to Kenneth Jones, National Aniline representative, why Botany prefers Nacconol SL.



write for this booklet!

says Richard G. Stoehr,
Vice President and General Manager
Botany Finishing Co.
Passaic, New Jersey

"To finish the high grade of goods we process and in keeping with our slogan "Botany* has the finishing touch", proper cleaning is an all-important first step.

"We scour with Nacconol SL because it's the most efficient and most economical detergent we've found . . . and we always get the same fine results run after run.

"Critical as we are, we rarely have to worry about rejects. We can be confident that the finished goods will meet our strict standards."

If you need a good liquid surfactant for any wetting, foaming, penetrating, emulsifying, dispersing or cleaning application, you'll find Nacconol SL highly effective and easy to use. We'll gladly send sample and data.

*Reg. T.M.

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40 RECTOR STREET, NEW YORK 6, N. Y.
Atlanta Boston Charlotte Chicago Dallas Greensboro
Los Angeles Philadelphia Portland, Ore. Providence San Francisco
In Canada: ALLIED CHEMICAL CANADA, LTD.,
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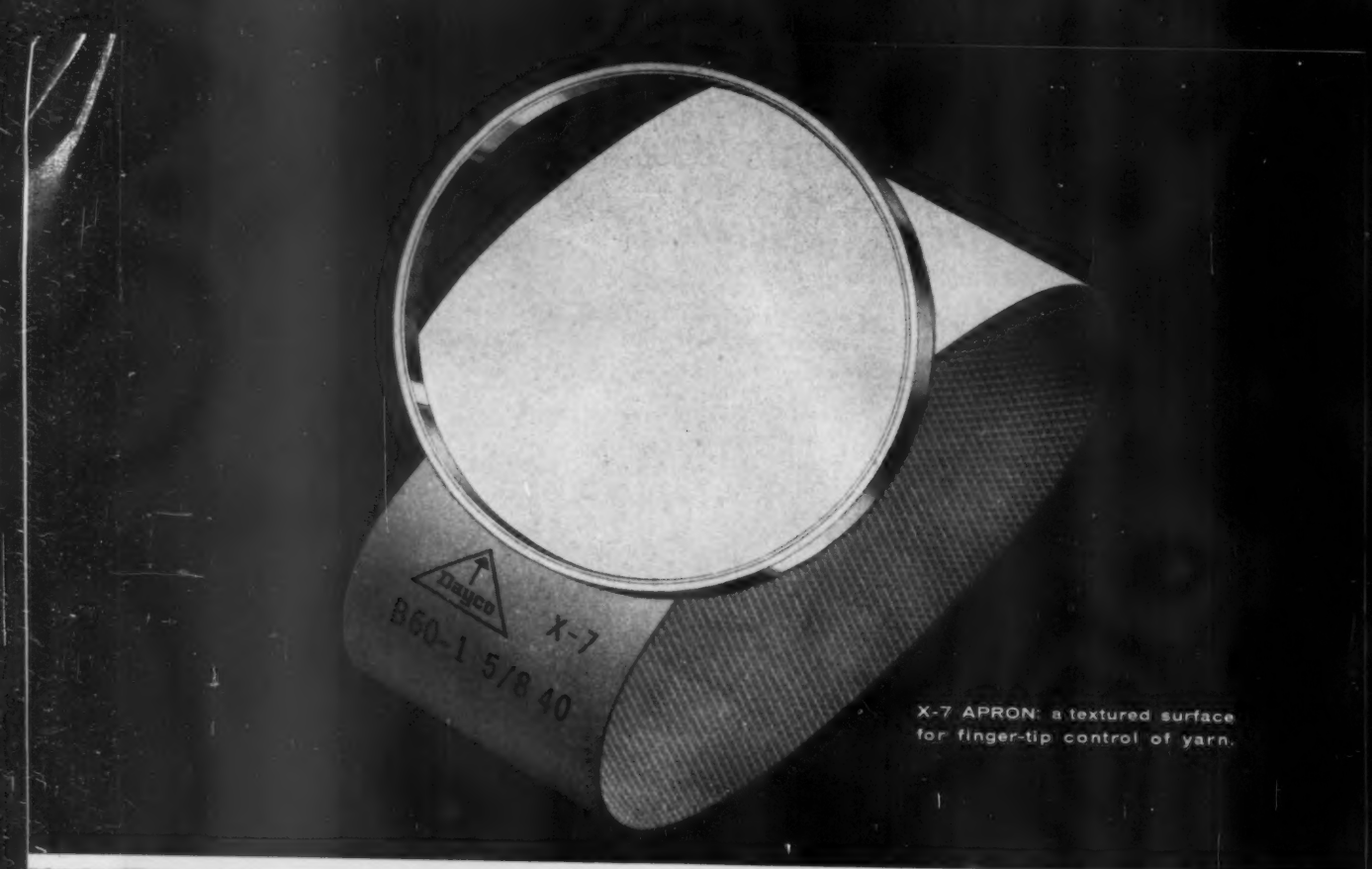
FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 25



X-7 APRON: a textured surface for finger-tip control of yarn.

X-98 COT: outstanding anti-static properties at top temperatures.

X-35 COT: a positive grip that breaks up surface tension.

New Ingredients and Special Surface Texture Make These Dayco Aprons and Cots Superior

Cash outlay for aprons and cots is but a small part of the cost involved in the spinning operation, yet use of the right apron and cots combination can do much to increase efficiency. Before you place your next order, add to your file of information on superior aprons and cots these facts about the new Dayco X-7 apron . . . Dayco's X-35 and X-98 cots:

FINGER-TIP CONTROL OF FABRICS

Dayco's X-7 apron, readily identified by its pink color and triangle imprint, has, as the micro-photo inset makes clear, an amazing skinlike surface that permits unusual control of fibers of every type. And the X-7 combines with its efficient handling of fibers many other qualities equally important.

It offers exceptionally high resistance to ozone checking as well as lengthwise cracking caused by flex. Its resilience and sturdiness are equally impressive, enabling the Dayco X-7 to meet, fully and satisfactorily, the demands of modern drafting.

POSITIVE GRIP FOR BETTER DRAFTING

Visual inspection of Dayco's X-35 cot, intended primarily for use on the back line, reveals that it contains somewhat finer particles of material than are usually found in cots of medium Shore hardness.

Many such cots, because of their larger cell structure and comparative softness, lack sufficient tensile strength. But Dayco's X-35 does not. While providing a positive grip that breaks up surface tension, it also meets all other standards of fine performance.

NEW INGREDIENTS PERFECTLY COMBINED

Like Dayco's X-7 apron, the X-98 cot, recommended for front-line use, derives its superiority from a new formulation. The anti-static properties retained by the X-98 even at high temperatures deserve special mention. Its durability is also noteworthy, as is the top-quality yarn it helps deliver.

Originally developed to meet the problems of a particular mill experiencing heat build-up, the X-98 is typical of Dayco's approach to customer service. Demand for the X-98, as word of it traveled from mill to mill, has made it an important new item in Dayco's complete line of cots.

GO DAYCO ALL THE WAY

Whether a few, or whether hundreds of thousands of a product are marketed, Dayco research and quality control are constantly at work. A fine field staff stands ready to answer any questions you may have about the suitability of any Dayco product for a given assignment.

Put the best to work for you in the best possible way, with the help and advice of your Dayco representative! Phone or write Dayco Textile Products, 401 South Carolina National Bank Building, Greenville, S. C.; Overseas plant: Dundee, Scotland.

Dayco TEXTILE PRODUCTS

Division of Dayco Corporation

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 27

WHITIN....*The best way to better yarns*

Manufacturers of textile machinery for processing

COTTON
WOOL
WORSTED
SYNTHETICS
BLENDS

Established 1831

Whitin manufactures a complete line of modern, efficient, high-production equipment for the processing of natural and synthetic fibers. Whitin's world-wide reputation for producing the very finest in textile machinery is built upon 130 years of experience in the field. Regardless of its preparatory function, each Whitin machine will do its specific job better, faster or more economically than that job has ever been done before. Each will show unmistakable evidence of the advanced research, engineering and craftsmanship which are inherent in all machinery made by WHITIN.

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS • U.S.A.

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Represented in principal textile centers around the world through
WHITIN INTERNATIONAL LIMITED
San Juan, Puerto Rico • Whitinsville, Mass.

• WHITIN SERVES THE TEXTILE INDUSTRY •

Whitin offers the textile industry the most comprehensive line of preparatory machinery and supplies available. Utilizing established directory techniques, these are the products we make:

ADAPTERS
Cone, Spindle

APRONS
Canvas, Feed, Long-Draft, Metallic, Rub, Spinning, Roving

ASBESTOS
Processing Machines

AUDOMAC DOFFER SYSTEM

BANDS
Spinning, Wool Spinning, Twisting

BATT-MAKING MACHINES

BEARINGS
Babbited, Brass or Bronze, Sleeve, Oil-less, Nylon

BELTS
Leather

BLADES
Staple Cutter

BLENDERS
Fiber

BOARDS
Clearer, Comber, Thread

BOBBIN HOLDERS

BOLSTERS
Spinning, Twisters

BOXES
Comb

BRAKES
Spindle

BREASTS
Card, Garnet

BRUSHES
Card, Comber

BUFFERS
Cot

BUILDER MOTIONS
Spinning, Twisters, Wool Spinning

BUNCH BUILDERS
Spinning

BURR CRUSHING MACHINES

BUSHINGS
Bronze, Synthetic, Self-Lubricating

CAMS
Builder — Traverse

CARD BREASTS

CARD CLOTHING
Metallic

CARD CLOTHING MACHINES

CARD CLOTHING SERVICE

CARD CONVEYORS

CARD GRINDING MACHINES

CARDS
Cotton, Woolen, Synthetic

CASTINGS
Aluminum, Iron, Brass, Bronze

CEILING CONDENSERS

CHAINS
Builder, Roller

CHANGEOVERS
Roving, Spinning, Twisters, Wool Spinning

CLEANERS
Mechanical, Cotton

CLEARERS
Flat Revolving Roll

CLEARER SPRINGS

CLUTCHES
Spindle

COILERS
Sliver

COLLECTORS
Waste

COMB BOXES
Cards

COMBER PARTS
Cotton, Worsted

COMBERS
Cotton, Worsted

COMBS
Doffer, Nipper

CONDENSERS
Return Air

CONDENSERS
Ring Doffer, Tape

CONES
Evener

CONVERSIONS
Spinning Drafting Systems

CONVEYORS
Apron, Slat

COTS
Top Roll

COTTON CONDENSERS

COUNTERS

COVERINGS
Leather Roll

CRADLES
High Draft

CREELS
Drawing, Roving, Spinning, Twister

CUTTERS
Fiber, Tow

CYLINDERS
Card, Picker, Spinning, Twister

DISTRIBUTORS
Belt, Rake

DOUBLERS
Sliver, Yarn

DRAWING FRAMES
Cotton

DRIVES
Belt, Gear, Tape

ENGINEERING SERVICES
Mill Surveys

FANS
Exhaust

FEEDERS
Blending, Card, Garnet, Intermediate, Opener, Picker

FILTERS
Air, Lint

FLY FRAMES
(See Roving)

FLYERS
Roving

GARNETTING MACHINES

GEARS
Metal, Non-Metallic (also Pinions)

GLASS YARN MACHINERY
Spinning, Twisters

GRIDS
Opening, Picking, Cards

GRINDERS
Drum, Traverse

GUIDES
Sliver, Thread

HEADS
Cylinder

HALF LAPS
Comber

HOLDERS
Bobbin, Ring

LABORATORY EQUIPMENT
Yarn Reels, Yarn Scales

LAGS
Picker

LAPPERS
Sliver, Ribbon, Superlap

LICKERS-IN
Card

MIXERS
Mechanical

MOTE KNIVES
Card

NEEDLE BARS
Comber

NEEDLE REPAIRS
Comber

OPENERS
Cotton, Synthetic Staple, Wool

PICKERS
Cotton, Wool, Rag

PICKER PARTS
Cotton, Wool, Rag

PIN DRAFTERS
(See Roto-Drafter)

PINS
Card, Comber, Cradle, Lap, Picker

PULLEYS
Iron, Steel, Aluminum, Tape Tension

QUILLERS

RAG PICKERS
Cotton, Wool

REELS
Dresser

RING DOFFER CONDENSERS

RINGS
Spinning, Twister, Wool Spinning

RODS
Lap, Lifter, Picker

ROLL COVERING MACHINES

ROLL STANDS

ROLLS
Brush, Calender, Doffer, Drawing, Roving, Spinning, Fluted, Lap, Scavenger, Top, Antifriction

ROTO-DRAFTER

ROVING FRAMES
Cotton, Synthetic, Worsted

SADDLES AND NEBS

SCALES
Yarn Count

SCREENS
Card, Picker

SEPARATORS
Steel, Aluminum, Synthetic

SHEAVES
Tape Tension, V-Belt

SLATS
Picker

SLUB CATCHERS

SLUBBING FRAMES
(See Roving Frames)

SPEEDERS
(See Roving Frames)

SPINDLES
Cotton, Wool, Worsted, Synthetic, Twister

SPINDLE TRUING EQUIPMENT

SPINNING FRAMES
Cotton, Synthetic, Wool, Worsted

SPINNING FRAME SUPPLIES

SPREADERS
Roll

SPRINGS

SPROCKETS

STAMPINGS
Metal

STAPLE CUTTERS
Fiber, Tow

STOP MOTIONS
Drop-Wire — Electrical, Mechanical, Knock-Off

STRETCH YARN MACHINES

STRIPPERS
Card

TABLES
Feed

TAPE
Spinning, Twister, Condenser

TAPE CONDENSERS

TESTERS
Bobbin, Spindle, Yarn Reel, Yarn Scale

THROWING MACHINES

TOW TO-YARN MACHINES

TRAP MOTIONS
Twister

TWISTERS
Ring, Cotton, Wool, Worsted, Synthetic, Paper, Glass

UPTWISTERS
Synthetic Yarns

VENTILATION EQUIPMENT
(Return-Air Condensers)

WASTE MACHINERY
Cotton, Wool

WEIGHTS
Creel, Tension, Scavenger Roll

WINDERS
Filling Bobbin

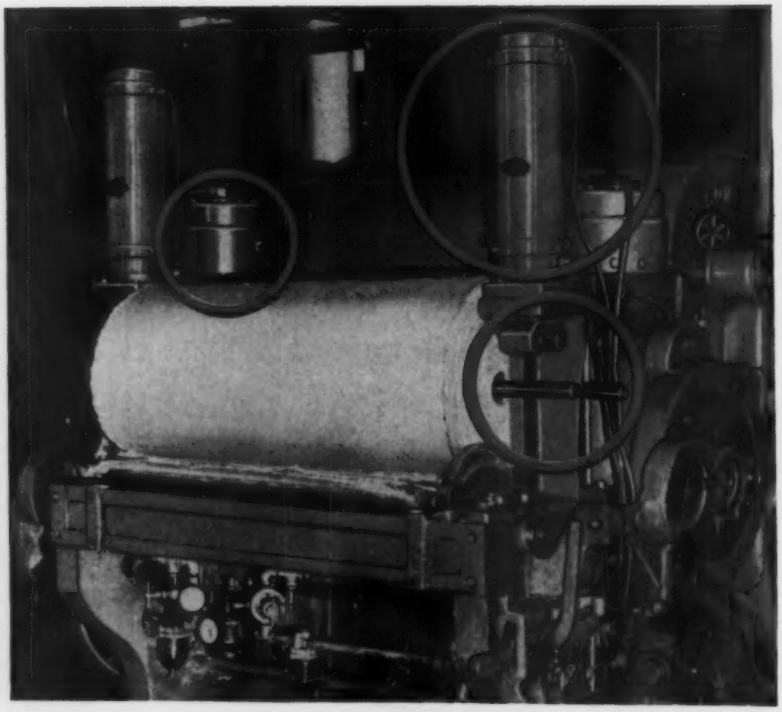
WINDER REPAIR PARTS
Filling Bobbin

WOOL SPINNING FRAMES

WORSTED SPINNING FRAMES

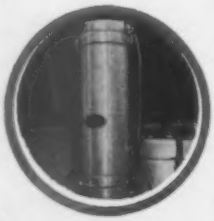
FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 29

BOOST YOUR PRODUCTION WITH Long* PNEUMATIC LAP CONTROLS



Increased yardage . . . better quality control . . . decreased doffing time: these add up to more production and greater profits for the progressive textile mills (now more than 570 installations) that use the Long* Pneumatic Lap Control Systems.

CALENDER section has sealed anti-friction bearings



COUNTER section eliminates loggerhead adjustment

CONSTANT EQUAL AIR PRESSURE on lap pins by headblocks (shown disengaged)

Auto-pneumatic controls in the Long* system apply immediate and constant equal pressure through air cylinders to each end of the lap pin. This allows heavier laps (up to 92 pounds) . . . savings in carding (up to 1½ yards of lap) . . . reduced doffing time (up to 25%).

Both counter and calendar sections are available and can be adapted to any type picker, for either cotton or synthetic fibers. Maximum safety and minimum maintenance (fewer moving parts) are additional benefits with the Long* Lap Control systems.

SEND TODAY FOR YOUR ILLUSTRATED BROCHURE

*U. S. Patent No. 2,871,519. British Patent No. 850,694. Other U. S. and Foreign Patents Pending

LIVINGSTON & HAVEN, INC.

P. O. BOX 808 • CHARLESTON, SOUTH CAROLINA

Representatives in all major textile areas.

Address foreign inquiries to: Platt Bros. (Sales) Ltd., Oldham, England

OIL-STAINED CLOTH indicates a serious leak in a mill's profits. It's a sign you should find out about Texaco's "Stop Loss" Program now.

Texaco's "Stop Loss" Program can help you plug some profit-leaks

. . . and can boost your profits by as much as 4%

Oil stains can mean there's a leaky bearing, somewhere. Or a careless oiler. But their real significance is this: your mill may be overlooking an opportunity to control costs as tightly as it should.

By organizing lubrication, your mill can increase net profits by as much as 4% per year! Where should you begin? Start with Texaco's "Stop Loss" Program. It enables any mill to realize all the savings available through good lubrication practices.

"Stop Loss" starts with a thorough study of your mill's lubrication requirements, from bale room to cloth room. This is followed-up with recommendations for a lubrication control system fitted to your mill's needs. Then Texaco provides the basic "tools" needed to make "Stop Loss" work easily and effectively for you.

See how "Stop Loss" can work for you! Send for more information. Then ask to see our new film, "Stop Loss with Organized Lubrication," which dramatically illustrates the many new opportunities there are for savings.

Tune In: Texaco Huntley-Brinkley Report, Mon. Through Fri.-NBC-TV

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ATTACH THIS COUPON TO YOUR LETTERHEAD

I'd like more information on Texaco's new "Stop Loss" program.

Name_____ Title_____

CARS GIVE UPHOLSTERY FABRICS THEIR TOUGHEST TEST

B.F.Goodrich *This upholstery fabric is back coated with Hycar acrylic latex supplied by B.F.Goodrich Chemical Company.*

An automobile is just about the toughest proving ground you can find for an upholstery fabric. That's why the hidden advantages of a back coating of Hycar acrylic latex means so much in creating better, more durable fabrics. Hycar anchors the weave: it won't distort, won't ravel, no matter how many times the fabric is rubbed, stretched, or flexed. Seams can't slip either.

A Hycar back coating also gives the fabric lasting flexibility—and isn't affected by heavy doses of sunlight, heat or cold. Especially easy to use, this latex doesn't require compounding, is stable and colorless. The properties that make it washfast and unaffected by dry cleaning solvents are built right in.

Here's another way Hycar helps improve a product, open new markets. For more facts, write Department PF-11, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

PRODUCTS FOR TEXTILE IMPROVEMENT

B.F.Goodrich Chemical

a division of The B.F.Goodrich Company

Free!

CAROLINA MACHINERY FACT FILE

Descriptive Sheets on Fiber Preparatory Equipment

CAROLINA MACHINERY COMPANY manufactures fiber preparatory equipment such as Granular Card Tops, SRRL Openers, Cleaners, Absorbent Card Processing Machines, Aprons, Fiber Blenders, Ceiling Condensers, Cotton Cleaners and Openers, Conveyors, Cotton Condensers, Blending Feeders, Nonwoven Fabric Machines, Synthetic Staple Openers, Picker Lags, Waste Machines and Waste Utilization Plants. The Fact File illustrates and describes many of these units. Additional information will be added from time to time. Send for your free copy on company letterhead.

CMC **CAROLINA MACHINERY COMPANY**

SUBSIDIARY OF CURLATOR CORPORATION, EAST ROCHESTER, N. Y.

Mfrs. of Opening, Cleaning, Blending and Other Fibre Preparatory Equipment

5019 WILKINSON BLVD. • CHARLOTTE 1, N. C.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 33

Who loses in "price fighting"?

Everyone does. The seller, the buyer and the public.

How so?

Examine the nature of price fighting. It is a war of cutting prices without regard to costs. Price fighting is the exact opposite of price *reducing* which occurs when costs are lowered through improved efficiency and productivity.

For the seller, price fighting annihilates profit leaving him without funds to finance research and development, modernization, service. It forces him to downgrade quality. It is the prelude to bankruptcy.

How does the buyer lose? For the fleeting advantage of a price concession, he directly and often unwittingly weakens his sources of supply. He actually helps kill the very competition that offers him the most quality and value. Price fighting requires the buyer to gamble with his competitive position by drying up major well-springs of innovation and development. It defers for only a short time the premium he ultimately pays for inferior equipment.

How about the consumer? Price fighting produces only mediocrity. It is the parent of over-priced merchandise because it eliminates competition. It prevents the appearance of superior goods on the market at prices reduced by more efficient production.

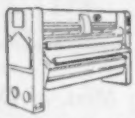
Price fighting is a war against quality... a war nobody wins. It is the least creative and the least courageous of all business effort.

Rodney Hunt management firmly subscribes to the kind of competitive selling in which price *reduction* is one of several important factors. We are deeply concerned about holding costs down while maintaining high quality so that we may offer more productive... more profitable wet finishing equipment to the industry.

Rodney Hunt Machine Co.

RODNEY HUNT

TEXTILE MACHINERY DIVISION | 66 Mill Street, Orange, Massachusetts



Tensitrol® Washers • Bleaching Ranges and Rangettes® • Tru-Shade® Dyeing Machines • Wring-Master® Padders • Niptrol® Mangles • Special Equipment

How a Winner Acts

At long last—and high time, too—the textile industry comes up a winner. It has won the battle for faster depreciation of its machinery. (For details of the new write-off schedule and a report on TEXTILE WORLD's telegraphic survey of opinion among mill executives and machinery manufacturers, see "Late Report," beginning on page 17.)

With this big win chalked up, what next?

We'd say the industry's next move is to act like a winner.

And how does a winner act? This way, as we see it:

1. He makes good on his campaign promises.

In exchange for realistic depreciation schedules, industry spokesmen throughout their long drive pledged swift moves to modernize plant and equipment. Now comes the time—and the opportunity—to begin making good on that pledge.

New depreciation rates will make available some $25-million (Treasury estimates the tax load will be that much lighter) that has not been available for modernization up to now. That is a tidy sum to add to the over-$400-million rate at which the industry is modernizing this year. New depreciation money should begin to move almost at once. Its impact should begin to show up quickly in order books of equipment manufacturers and in higher efficiency, lower cost, and better quality in the mills.

If we judge the present temper of industry leaders (see their comments beginning on page 17a), they'll act like winners in handling this new money. They'll make good on their pledge to speed modernization.

2. He lifts the level of his responsibility.

Many a politician, having won an election, discovers that it's one thing to make speeches about a problem but quite another thing to come to grips with it and find an answer. When he takes office, he finds he has to work in a new environment of responsibility.

What we're saying is that the more money there is to spend for modernization, the greater is the obligation to spend it responsibly. Management skills that were good enough last year aren't good enough today. The new depreciation money now becoming available is one more compelling reason for the textile industry to upgrade still more its management of money, manpower, equipment, and plant. Following this line of thinking, we look for a bigger role in the industry for professional management men and engineers. They're needed for decision-making on capital investment, for production control, inventory management, product development, market research and analysis, long-range planning and programing.

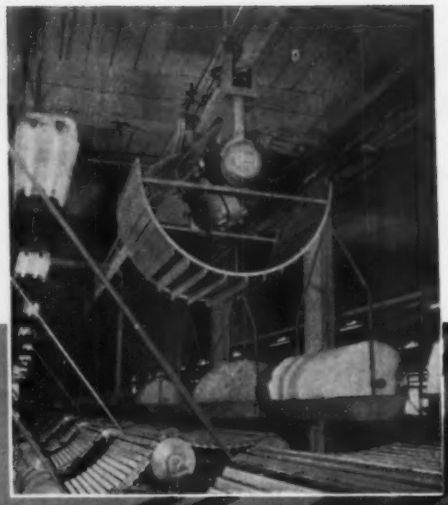
3. He fights to lengthen his string of wins.

A campaign winner has to fight again and again to stay in office.

In the same way, the textile industry still is fighting some fights it hasn't yet won. For example, the fight against the two-price systems for cotton, and the crusade to convince the Office of Emergency Planning that the industry is essential to national security.

Best way to lose the gains promised by the new depreciation schedules is to ease up on the battles yet to be won. The recent depreciation victory gives reason to believe that more wins lie ahead. In the response of industry leaders to our opinion survey, we sense new hope and a high resolve. The hope—that the tide has turned in the industry's favor. The resolve—that there'll be no let-up in the battle for still more wins.

To the mill man who wants maximum overhead cleaning



You get maximum overhead cleaning with the Aero-Sweep Cleaner because:

- it cleans the objective more thoroughly with head-on air blasts at ½ the distance of other cleaners.
- it cleans all objects throughout cleaning cycle at predetermined frequency.
- only Aero-Sweep has an exclusive patented indexing feature which sets the cleaning pattern for any area, prevents lint accumulation on all surfaces.

You clean your mill at less cost with Aero-Sweep because:

- one Aero-Sweep Cleaner cleans up to three times the area covered by other cleaners.
- it ends manual blow-down by removing lint from ceilings, walls, overhead equipment.
- it minimizes slubs and gouts, improves quality of product.

For details, see **free illustrated** Bulletin 21A.
Clip coupon to letterhead and mail today.

Name_____

Bahnson
AIR-O-MATION

THE BAHNSON COMPANY • WINSTON-SALEM, N. C.

TEXTILE WORLD

Technology Overseas

British Develop Flame-Resistant Acetate Yarn

A new flame-resistant acetate, developed by Nelsons Silk Ltd., has the flame retardant incorporated into the acetate solution before extrusion. This procedure makes flame resistance more permanent than the normal procedure of applying flame retardants to fiber or fabric. The flameproof properties are not diluted by normal cleaning or washing. The company thinks the bond between the acetate and the retardant is chemical although they can't prove it. Fire still melts the acetate, but once the flame is removed the acetate is self-extinguishing.

Hungarians Reveal New Yarn-Winding Machine

A new two- and four-fold winder, developed by three Hungarians, uses a new concept that keeps the operating position of the bobbins and the split-drum the same during starting and stopping. The winder uses a split-drum builder motion that incorporates a stress stabilizer. A starter-brake disk, attached to the side of the drum, controls the starting and stopping of the drum. This disk uses axial displacement to accelerate the drum gradually. But if the yarn breaks, the disk immediately stops the drum. The winder works on cotton, wool, or man-made fiber yarns. Winding speeds range up to 654 ypm.

Japanese Find Cheaper Way to Make Nylon

Toyo Rayon has come up with a new process for making nylon that is cheaper than the conventional way. It's called the cycloparafin-ketoxime process. The company gets caprolactam by radiating cyclohexane with photoelectric energy in the presence of nitrosyl chloride gas. Toyo expects to replace all its production (60 tons per day) with the new process by remodeling existing equipment. The company says it can make nylon for less than 50 cents per pound with the process.

East Germans Have Novel Bast Spinning Frame

A new wet-spinning frame for bast fibers has a chamber for drying the spun yarn before it leaves the machine. This unit, recently patented in East Germany, feeds the bast strand from a container through a water trough. Then the fibers are drawn through two 4-roll drafting zones. After drafting, the yarn goes to a centrifuge that removes its moisture. Moist air in the spinning chamber is drawn off through a pipe near the top of the enclosure.

Czechs Develop One-Step Fiber-to-Yarn Spinning

A new Czech spinning device takes fibers that have been dispersed in air or liquid and parallels and twists them into a yarn. This is a one-step continuous-spinning process. The tip of a conical basket forms the delivery end of the unit. Within this basket is a parallelizing cylinder. Fibers passing through or around this cylinder are forced into a vertical position. All fibers are straight before they pass into the twisting head. Result: stronger yarn.

For more information on any item above, write Department KS, Textile World, 330 W. 42nd St., New York 36, N. Y.

"I came back from Japan determined more than ever to do all I could to alert our company, its employees, and the textile industry to the tremendous competition to be expected from the Orient." Those are the words of Walter S. Montgomery, president and treasurer of Spartan Mills, Spartanburg, S. C., as he gives TEXTILE WORLD *readers an exclusive . . .*

EYEWITNESS REPORT:

COMPETITION. That one word stands out over all others in talking with Spartan Mill's Walter S. Montgomery about his recent tour of the Far East. What started out last spring to be a pleasure trip turned into an intensive inspection and evaluation of foreign mills—17 of them, in four different countries. Listen to what he has to say:

"Japanese technological advances and their present and potential uses are a tangible threat to our American textile industry. I came back home from Japan resolved to do all in my power to alert our organization and any others I could to the importance of meeting this foreign competition.

"We are not backward as an industry. But we can learn things from other nations. I feel a responsibility to enlist all possible help to stop further liquidation of our great and vital industry."

Here are TEXTILE WORLD's questions (boldface type) about Walter Montgomery's trip, and his answers (lightface type):

As a result of your trip, what specific steps will you take to protect your company, its employees and to help the U.S. textile industry?

Here at Spartan Mills we've been doing things all along to improve our position. But now we're going to do more. During the last 8 years, we've spent more than $12-million updating our equipment and improving our products to meet foreign and domestic competition. This year, we plan to spend another $1.5-million, mostly on improvements in carding and weaving.

And I want to emphasize that we're not going to wait for the ultimate perfection in textile machinery. We're going to install the best available equipment the minute we are convinced the return on the investment justifies it—not next year or 5 years from now. For example, we now have an option on the first available Deering-Milliken automatic doffer that will be produced by Whitin Machine Works.

Do you plan to buy any foreign-made equipment?

We have every intention of buying U.S.-made machinery where possible. But if our own manufacturers don't produce equipment comparable to the best foreign machinery, then we'll buy from foreign countries. At the moment I am thinking of two-delivery drawing with 22x44-in. coilers and cans. This type of drawing has been very successful in Europe. American manufacturers have been working on it and are now producing similar type frames.

Which countries did you visit and how many mills did you see in each?

I visited four mills in the Philippines, three in Taiwan (Formosa), four in Hong Kong, and six in Japan. I spent most of my time observing Japanese mills, machinery, methods, and management.

Before we come to Japan, will you give us your impression of the textile industries of the Philippines, Taiwan, and Hong Kong?

• **Philippines**—The Philippines at present have modern mills with a total of about 500,000 spindles. The manager of one plant told me

"Don't kid yourself—Japanese equipment is good. And so are their end products."

"I feel a responsibility to enlist all possible help to stop further liquidation of our great and vital industry."

"I'm tired of hearing that our industry is backward and obsolescent. Japan is not 'way ahead of us."

Threat from the Far East

that the owners intended "to keep expanding until there are at least 1.5-million spindles operating in the islands." I was told the mills were running 7 days a week and all had plans underway for expansion. There is a 75% duty on textile imports and the aim of the Philippine government is to make the Philippines self-sufficient in textiles. The plants are serving 26-million people —so there's plenty of room for the industry to grow.

• **Taiwan**—I was not particularly impressed with the mills in Taiwan. They aren't as modern and well managed as the mills in other countries I visited. At that, the industry has doubled in size during the last five years. Taiwan now has about 300,000 spindles.

• **Hong Kong** — This British colony has about 500,000 spindles and 12,500 looms. Textile exports jumped from $77-million in 1957 to $179-million in 1960, much of this reaching the United States. About 70% of Hong Kong's exports go to the United States and the United Kingdom, with the U. S. getting about 10% more than U. K. My personal observation is that the quality of Hong Kong goods is not up to that produced in the Philippines or in Japan, with the exception of combed goods destined for England.

Since Japan adopted voluntary quotas for the U. K. in 1957, there has been a tremendous growth in the garment industry in Hong Kong. There are about 100,000 sewing machines in organized plants and in home industries. Hong Kong is now one of the largest importers of material from Japan, and most of this cloth finds its way into the U. S. usually as finished garments.

How big is the Japanese textile industry and how does it stack up with ours technologically?

Japanese spindles have increased from 2.5-million to 12-million since the end of Word War II. It's all new, advanced equipment. I saw only Japanese equipment in Japan. And don't kid yourself—their equipment is good. And so are their end products. As good as can be made anywhere.

Japan's cotton mills are divided into three basic groups. The top 10 mills are known as "The Big Ten." They operate from 300,000 to 800,000 spindles each, with complementary loom equipment. These mills account for about 50% of the industry's spindles. The second echelon is composed of about 50 medium-size mills with an average of 50,000 spindles each. Then there are about 150 mills averaging 10,000 spindles each. The remainder of the industry consists of an incredible number—about 12,500—of small independent weaving mills. Most of them are backyard plants, with about 300,000 hand looms or nonautomatic power looms. In most cases you'll find them in private homes with not more than two or three people working them.

What machinery developments impressed you most in Japan?

Probably the most outstanding development I saw is the Toyobo continuous automated spinning system (TEXTILE WORLD, January 1961, page 58). This system feeds raw fiber to opening equipment, which delivers the fiber to cards

without forming a lap. A conveyor belt delivers sliver to the first drawing. From that point, the sliver goes into cans. And from there, it is fed automatically to second drawing—and evening frame. Next operation is sliver-to-yarn spinning frames that are doffed by an automatic doffer. Bobbins are delivered from the doffer to an automatic cone winder. All these processes require only five direct operators for 6,000 spindles.

Another thing I was interested in was some new carding attachments. One in particular impressed me. It was producing 30 pounds of stock an hour. I also noticed that Japanese mills are rapidly switching over to metallic clothing. At least half of the cotton mills now have it on their cards.

Did you see or hear of any new machines under development? Any breakthroughs coming?

Yes. Several automatic drawing frames are under development. Most of them have devices that correct unevenness. One measures at the trumpet and corrects front-roll speeds within predetermined limits. Another measures bulk fed behind the back roll, stores data in a pneumatic memory device, and corrects unevenness between the second and front roll.

The Japanese also have several automatic doffers under development. But I saw only one in operation. I think we're ahead of the Japanese in this field. Spartan Mills has an option on the first Deering-Milliken machine to be commercially produced.

In addition to the well-established OM-S direct spinning frame, two other companies are working hard to develop sliver-to-yarn frames. About 5% of the spindles in Japan are the sliver-to-yarn type.

I heard of only one major loom development. This loom has stationary boxes. Only the lay moves. I saw one in operation at the trade fair running 330 ppm. Several loom modifiers were called to my attention, mostly improved motions such as let-offs.

In the auxiliary equipment I saw a high-speed sorting device that may be the answer to making a quick fiber array. I saw other interesting machinery developments in Japan, but I won't go into details here. They are fully described in William A. Newell's able report on "Textile Research in Japan," published by the Textile Research Center, North Carolina State College.

Do you think Japan is 'way ahead of us in machine and manufacturing technology?

No. To be sure, I saw many new things in Japan. They pose a real threat to our American industry. But I want to make it clear that our industry has made great advances also. I get sick and tired of hearing that our industry is backward and obsolescent.

In spite of the tremendous increase in wages, taxes, and cost of machinery and supplies, we are selling cloth today at substantially lower prices than we did 10 years ago. A technologically backward industry couldn't do that. Our man-hour production has been steadily increasing. Accelerated modernization and automation are moving ahead. And we are just beginning. I feel we're on the threshold of spectacular advances in our American technology. But here are some hard facts:

England and the U.S. are the only two textile countries that have less spindles now than they had 10 years ago. While it is true that much of the equipment in the U.S. is older than that in Japan, Pakistan, the Philippines, Hong Kong, and Formosa, it is erroneous to say that our textile industry is not modern. Over $2-billion have been spent in modernizing 20-million spindles during the past 10 years. That's equal to $100 per spindle.

In checking back on our own records, I'd like to point out that the market on 80x80s in August 1948 was 20¢ per yard—80¢ per pound. Print-cloth cotton at that time was 34¢ per pound. Today's price on 80x80s is 18¢ per yard—72¢ per pound—and print-cloth cotton is 35¢ per pound. This shows a decrease in manufacturing margin of 9¢. Our records also show seven wage increases since August 1948, giving an average wage at least 40% higher than it was in 1948. When one considers the increase in repair parts, supplies, and taxes, it's evident that any mill that did not modernize would be out of business today. But in spite of our higher wages and standard of living, to my knowledge a dollar will purchase more textiles in the U.S.A. than in any country in the world.

A sidelight I'd like to mention—with the exception of Hong Kong and France, the 10 countries exporting the largest quantity of textiles to the U.S. have prohibitive tariffs, embargoes, or restrictive controls on goods coming into their countries. These countries are Japan, Egypt, Portugal, Spain, India, Korea, Formosa, and Pakistan.

Some time ago, the Secretary of Agriculture announced that the subsidy on U.S. export cotton would be increased from 6 to 8½¢ per pound, thereby placing domestic mills at a further disadvantage. Recently, Secretary Ball of the State Department indicated a gradual increase in imports rather than a reduction. He is definitely opposed to quotas as recommended by our industry leaders—but he does recommend that each textile-producing country voluntarily control its exports to the U.S.

In the event of war, textiles are recognized as second in importance to steel. For this reason alone, it is suicidal for our country to permit further liquidation of this vital industry. But liquidation is inevitable unless restrictions are made to stop the constantly increasing flow of goods from foreign countries that have low standards of living and wages, plus the added advantage of being able to purchase their raw material (our cotton) 8½¢ per pound cheaper than the U.S. textile manufacturer can.

It seems inconceivable to me that our government would permit the loss of jobs through liquidation of our industry. I say the time has arrived for each man in the textile industry to put his shoulder to the wheel and insist that our raw mate-

rial be purchased at the same price given our foreign competition, and that reasonable quotas be established. And such quotas should take into account the wages paid in these countries compared with U. S. standards.

What did you learn about research and quality control in Japan?

The larger Japanese mills have excellent research and quality control facilities. The Big Ten alone is said to employ over 350 scientists. In addition, there's a central research organization that's doing an outstanding job in both basic and applied research. Offhand, I'd say the instruments and equipment in Japanese laboratories are on a par with similar equipment in our own laboratories.

How does personnel management compare with ours?

Personnel management in Japan is vastly different from ours. But it is an accepted way of doing business over there. And apparently the workers want it that way.

In the first place, practically all operators are women. They do everything—including doffing, slashing, and material handling. You see only a few men in textile mills, usually in supervisory jobs and in machine shops.

The Japanese require 6 years of grammar school and 3 years of intermediate high school. Almost all are eager to pursue education. And the textile-mill system provides the answer for many girls, who come mostly from farms at age 16. They live in mill-operated dormitories, four to six to a room. And the mill pays for their board and keep. In off hours they go to mill-supported schools, where they study a variety of subjects—sewing, cooking, baby care, flower arranging. To these girls this is like going to college.

When the operators reach age 25 or thereabouts, they go back to their homes with a comfortable dowry of several hundred dollars. They then marry or go into some other occupation.

On the surface, you'd think that training an operator for only 10 years of service would be economically unsound. But Japanese management doesn't see it that way. The women are nimble and quick to learn. They can learn any job in the mill within 6 months. One of the advantages of the dormitory system is that there is little absenteeism. There are few if any domestic problems to worry the employees. There are no retirement problems for management, since employees leave at an early age. At two mills I visited, the average age of the women was under 21 years.

The Japanese are naturally neat, and their mills are extremely clean. You can see mechanical cleaners everywhere, supplemented by as much low-wage manual cleaning as is necessary.

Did you learn anything about what's going on in textiles in the Soviet Bloc of Asia?

Yes, I did learn several things—all second hand. Japanese and other Asiatic textile manufacturers told me that productive capacity in the Soviet Bloc has stayed on dead center—except for Red China. There, spindles have increased from 5-million in 1948 to 10-million in 1958, about the same number Russia has in place. China's looms follow the same pattern, with China now surpassing Russia in number of looms in place. And most of these looms are said to be modern.

Red China exports about 6% of her production—double the American percentage. The country is said to produce about 11-million bales of cotton per year. The Communists plan to increase this output. Rayon production is reported to be less than 20,000 tons per year.

Do you think the Japanese are living up to their voluntary quota arrangement on exports to the U. S.?

Yes, I think that among the textile-exporting countries, only the Japanese are playing fair with us in direct shipments to the U. S. I believe strongly in active foreign trade. But it must be orderly trade. That's why some sort of restriction will have to be imposed on Hong Kong, Pakistan, Spain, and other countries if they will not agree to quotas.

The Department of Commerce is apparently trying to do something to relieve our industry from harm by excessive imports, but the State Department seems to be working against us.

Do you feel that Japan really wants to cooperate with other textile-producing nations economically and technologically?

Yes, I do. While in Japan I attended the International Federation of Cotton and Allied Textile Industries (IFCATI) meeting as a delegate. Some 17 textile-producing countries, including the United States, were represented. Delegates from all these countries gave comprehensive, thoughtful reports covering textile operations all over the world. Here are some of the general findings and conclusions:

1. Textile expansion and modernization programs have a fairly universal pattern throughout the world. But not enough attention is being paid to market expansion.

2. Nationalization and dreams of self-sufficiency characterize nearly all textile-consuming nations.

3. Increased productive capacity throughout the world assures further market disruption.

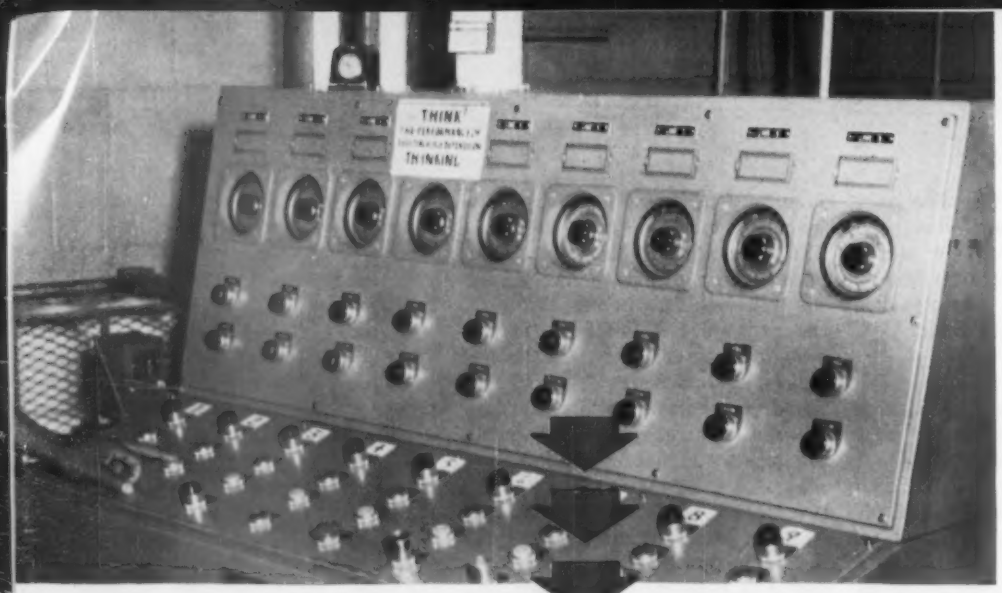
4. If textile producing areas of the world are to live and let live, means must be found for controlling trade channels and offsetting restrictions such as export subsidies.

5. Advanced nations of the West should be unwilling to accede to further substantial inroads on their home and foreign markets.

6. There should be a one-price system for raw cotton in world markets. In this connection, I might say that Japanese textile men think we are out of our minds to charge our own manufacturers 8½¢ per pound more for cotton than other countries have to pay.

7. Generally, information presented and attitudes shown by participating delegates support the position of the U. S. textile industry.

With such findings coming from an international meeting, I am greatly encouraged about the hope for orderly international trade in textiles. This hope is probably the most important impression I brought back from my trip to the Orient.



Now: Pushbutton

PUSHBUTTON yarn handling was once a dream. Today it's a reality at P. H. Hanes Knitting Co., Winston Salem, N. C. Here three men move up to 500,000 pounds of knitting yarn per week from spooling to knitting. Human hands never touch the yarn. And there's no manual lifting of yarn carriers either.

But that's not all. In minutes yarn is automatically stacked, stored, unstacked, and delivered to predetermined unloading stations in the knitting room. The same system carries gray cloth and empty baskets to cloth storage and returns empties to the spooler room.

How is all this done so easily and efficiently—and by so few people? Look at the photos on these six pages. You'll see a 1,400-ft. mill-designed conveyor system serving 129,000 square feet of floor space. You'll see two men operating control stations and one man guiding yarn in and out of inventory storage. The rest of the work is done by motors, magnets, air, gravity, and hydraulic devices—all controlled electronically.

. . . Turn to page 44

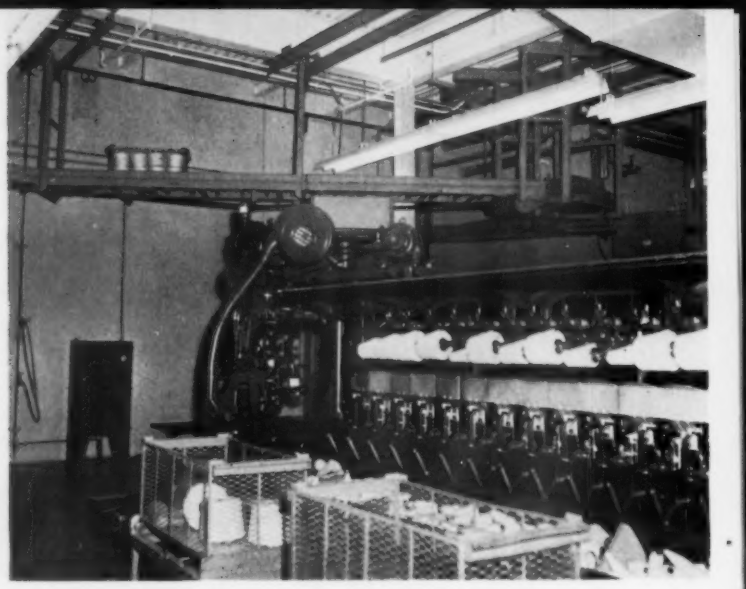
KEY to the new pushbutton system is the control console above and these nine selector stations—each holding eight baskets of similar type yarn.

Three men move 500,000 pounds of yarn a week —and never touch it by hand. Fantastic? Certainly. But it can be done—and P. H. Hanes Knitting Co. is the one to do it. Here's your on-the-spot report on the why, the how, and the payoff.

Yarn Handling

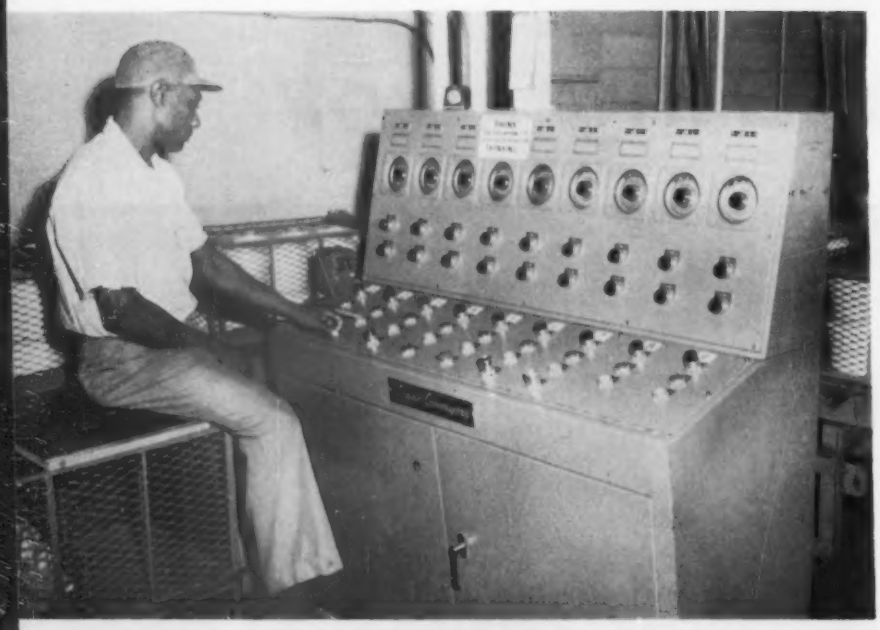
FIRST STAGE

Moving Yarn from Spooler to Storage



1.

OVERHEAD CONVEYOR first moves cones from spooler room to mezzanine next door, where pushbutton panel is located. Baskets are elevated on an inclined belt.



2.

CONTROL CONSOLE on the mezzanine then selects baskets of yarn as the operator reads identity cards and punches appropriate buttons. Takes about 30 seconds to send a basket to station for stacking.

PUSHBUTTON YARN HANDLING . . . *Begins on page 42*

Time needed to move a batch of yarn from spooling to knitting? Just 8 minutes from spooling to inventory storage, 5 minutes from storage to knitting. And this includes sorting, stacking, storing, unstacking, and dispatching to unloading stations.

No inventory is stored in the knitting room. When a knitter needs yarn, he telephones the dispatcher and tells him what he wants and where to deliver it. He places his order 10 to 15 minutes before his yarn supply runs out. Result: uncluttered knitting room, more floor space for machines, safer and better working conditions.

When the gray cloth is knitted, the conveyor system takes it—along with empty yarn baskets—to gray-cloth storage. Time: 2½ minutes. Empty baskets return to the spooler room in 4 minutes, mostly by a gravity conveyor.

Although not a part of the yarn-handling system itself, the method by which gray cloth reaches the finishing plant is worth telling about. Long lengths of cloth are sewed together and fed into J-boxes at 250 ypm. These boxes extend through a wall into an adjacent finishing plant, where the cloth is scoured and bleached by a continuous process.

The system is powered by 40 motors ranging from ½ to 3 horsepower. About 20 horsepower per hour is needed to keep the yarn moving continuously. Voltage is 220 and 440, depending on size of motor. Main control console is on a mezzanine floor built above the storage area.

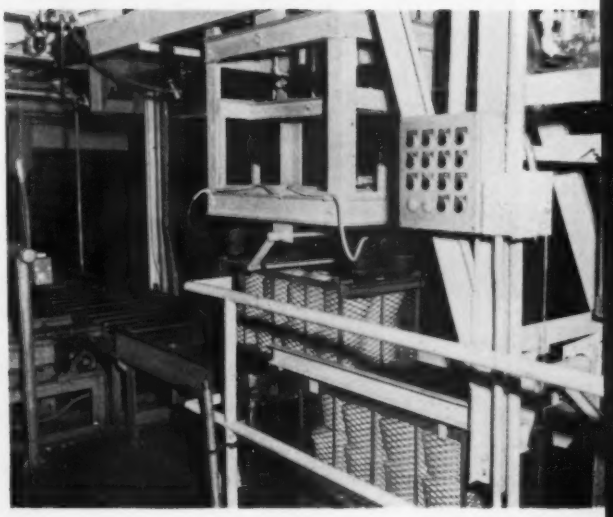
This yarn-handling system is the

3.

SELECTOR STATIONS—nine of them are now in use—hold eight baskets of yarn each. More stations can be added as needed. Takes 4 minutes to load and unload a station. That's 30 seconds per basket.

4.

ELECTRO-MECHANICAL LIFT raises and positions the baskets in stacks of eight for transfer to storage. Lift capacity: 160 pounds. Baskets weigh 96 pounds each.



5.

BASKETS here are being moved away from device that lowers stacks to floor below. Then yarn is transferred to dolly and hand-pushed to storage.

6.

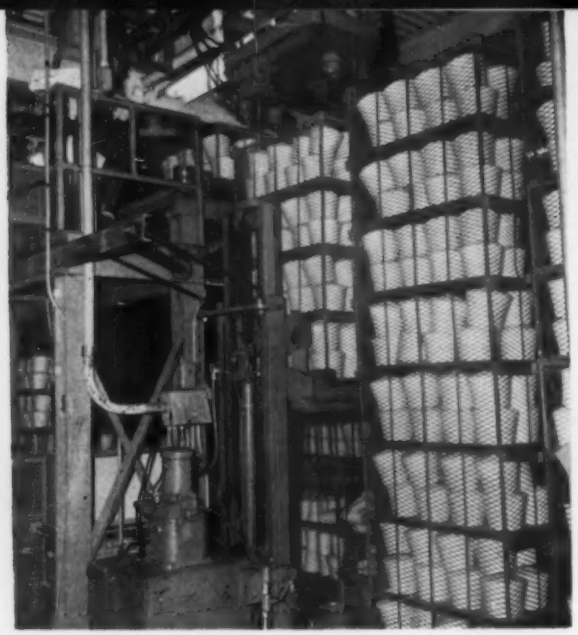
STORAGE area has a series of roller conveyors mounted on the floor. Track declines 4 inches from front to rear so gravity does most of the work in positioning. There are fire lanes for safety.

Now, to see how yarn moves from storage to knitting, turn the page.

SECOND STAGE

From Storage To Knitting Machine

7. FROM STORAGE, yarn is pushed to another lift at far end of room. Dolly used is similar to one used on other side of room.



8. UNLOADING lift removes baskets and indexes them onto a delivery conveyor running from loading platform to knitting. It's similar to one used to stack baskets.

9. DISPATCHER places pin in one of eight holes in basket frame to activate mechanism that sends basket to knitting station.

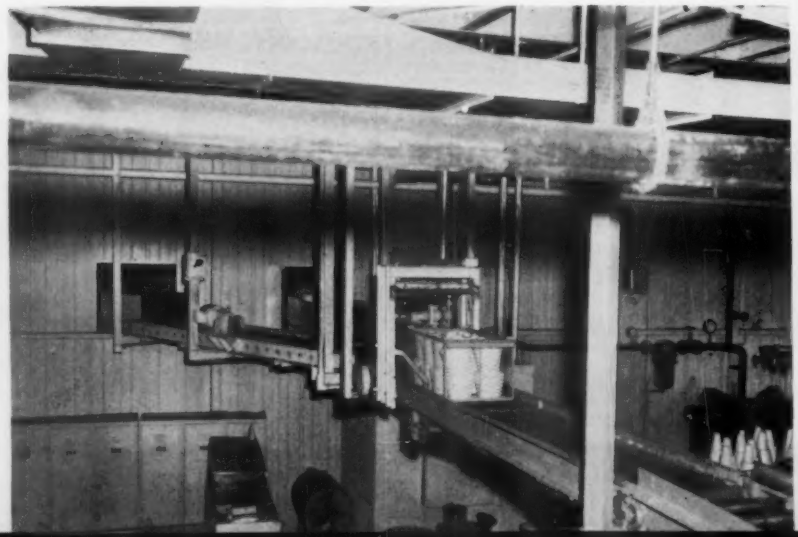
YARN HANDLING

. . . Begins on page 42

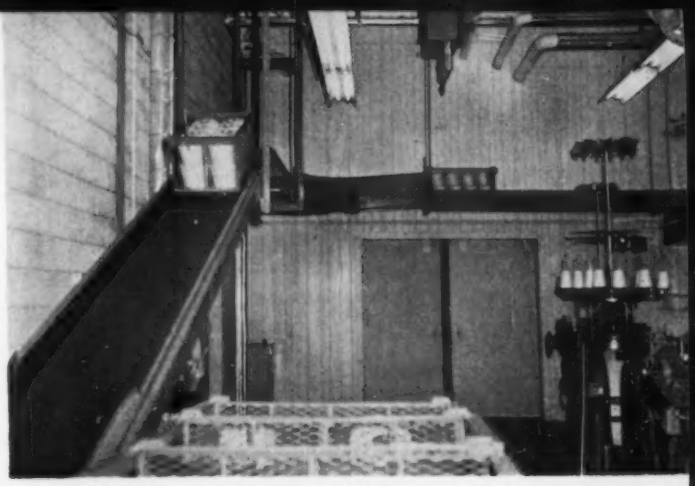
brain child of Hanes' top management: P. Huber Hanes Jr., president; John D. Green, vice president in charge of manufacturing; P. Frank Hanes Jr., assistant manager of cloth manufacturing; Fred P. Crouch, superintendent; and W. M. Lockrow, plant engineer, who did most of the designing and engineering. The system was built and installed by Logan Co. Electronic controls are by General Electric Co., conveyor belts by Goodyear Tire & Rubber Co., and steel-mesh (for conditioning) yarn baskets by Southern Steel Stamping Co.

The system at Hanes knitting today is complete within itself. But plans are to build an aerial conveyor from yarn mill to spooler room.

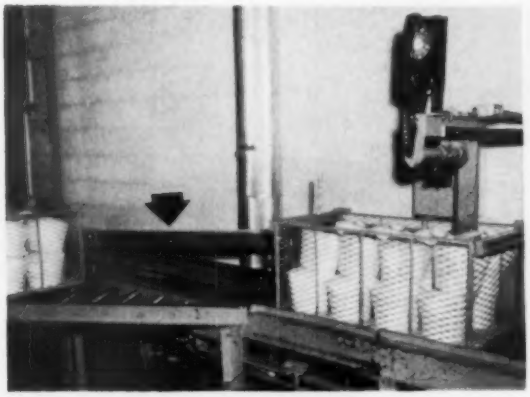
10. CONVEYOR TRACK splits here. Transfer switch activated by directional pin sends basket to either right or left side of knitting room (beyond wall). This section is a belt.



11. BASKETS DESCEND to knitting room and head for selected unloading stations. Eight sidetracks get baskets for storage.



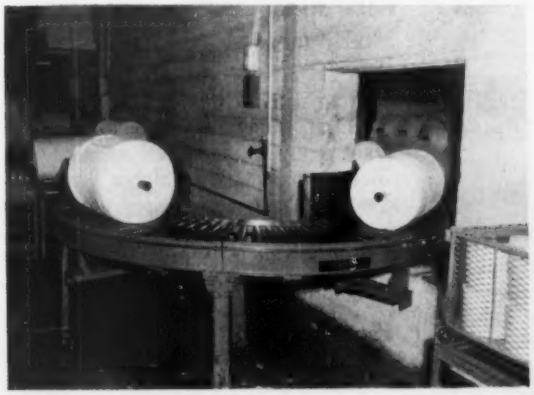
12. UNLOADING—Here pin at end of basket trips transfer switch to close the directional gate (arrow).



THIRD STAGE

Cloth from Knitting Room To Finishing Room

13. CLOTH rolls and empty baskets are delivered from the knitting room to gray-cloth storage on roller-and-belt conveyor. Section shown is power-driven.

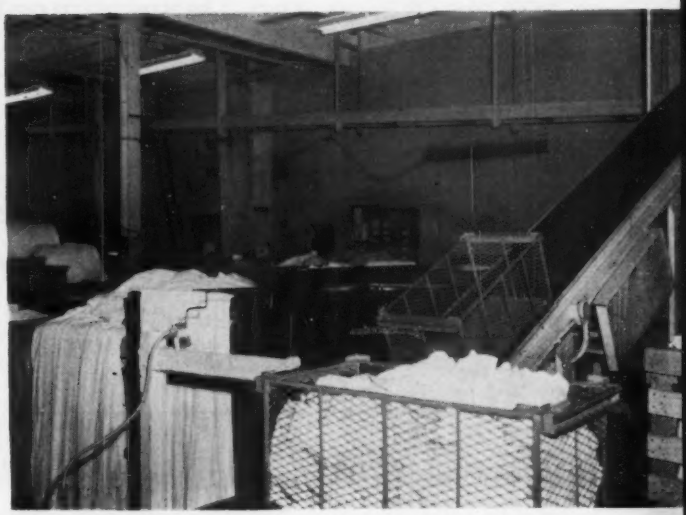


14. SEWING is next. Then gray cloth is fed into J-box at 250 ypm. J-box extends through wall to finishing department.

FOURTH STAGE

Empty Back to Spooler

15. EMPTY baskets ride up this incline. At top they are picked up by a roller conveyor and delivered to the spooler room.

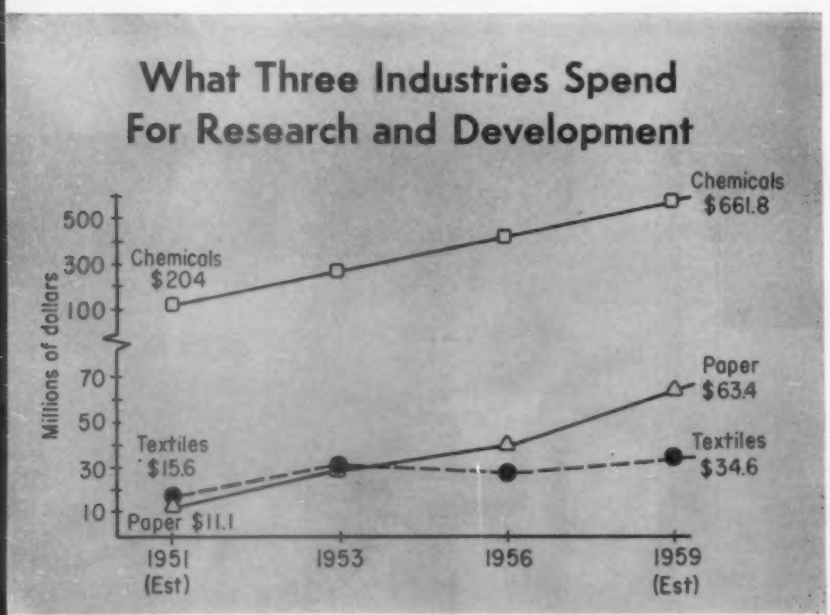


RESEARCH: Can Textiles

This comprehensive report on textile research and where it stands today makes one point and makes it strong: Now is the time for textile men (including you) to take a long, hard look at research activities.

TAKE a look at the statistics on this page and the following three pages. And you'll see where the textile industry stands in industrial research today. You can point to the fact that textile research has increased at a fairly constant rate over the past decade. But while this rate of increase has held steady in textiles, other industries have stepped up their research expenditures much faster. The result: Textiles have fallen behind.

Can textiles catch up? There is no "instant research." It takes time and money to acquire space, trained manpower, instruments, and pilot equipment. The industry now faces technological changes of such depth and rapidity that its traditional adjustments are not sufficient. Now is the time for textile men to take a good look at the factors behind today's speeding rate of industrial research.



WHY RESEARCH?

Here are two good reasons why the time is ripe for a step-up in research activity:

• **First, stakes are higher.** Population growth, consumer spending twice that of 1950, higher living standards, and more leisure time to enjoy them. These factors will shape demand for more and different goods in the coming decade.

• **Second, competition is tougher.** Heightened world competition has sunk exports to new lows and boosted imports almost across the board. (For a report on the step-up in research in one foreign country alone, read "Textile Research in Japan," by William A. Newell, former director of the Textile Research

By CATHERINE S. McKEAN
Special Assistant to the Director of Textile Research, School of Textiles, North Carolina State College, Raleigh, N. C.

Catch Up?

TABLE 1
What All Industries Spent on Research and Development in 1959

Industry	Millions
Aircraft	$3,250.3
Electrical equipment	1,607.9
Machinery	678.0
Chemicals	661.8
Professional and scientific instruments	382.9
Petroleum	300.7
Fabricated metals	223.0
Primary metals	138.1
Food	97.2
Rubber	89.3
Stone, clay, glass	73.6
Paper	63.4
Textiles and apparel	34.6
Other manufacturing	1,055.6
Nonmanufacturing	370.6
TOTAL	$9,027.0

(Source: McGraw-Hill Department of Economics)

Center at North Carolina State College.) But foreign manufacture is not the only or perhaps the greatest threat. There's a threat at home, too. During the 1950's, the textile industry, an old hand at intramural competition, witnessed some of its prizes carried off by teams that weren't even in the game. For example, in the past 10 years cotton's greatest loss in traditional markets was not to synthetic fibers, but to nontextile substitutes—chiefly to paper. This was a textile loss. And the winner was an industry that early in the 1950's began to step up its investment in research.

Substantial gains have also been made at textile expense by other types of goods and services. You can attribute these gains not only to social changes, but also to research and promotion of more "dynamic" industries.

LOOK AT THE FIGURES

Let's take a look at some figures. Research and development in the American economy have now passed the $12-billion mark annually. And three-fourths of this is performed in American industry.

One recent analysis has it that of 11 industries studied, the top three spent 6% of sales on research, and experienced a 52% gain in profits. The lowest three averaged only 0.2% and saw profits shrink. The correlation may be debatable, but it's a straw in the wind.

An investment consultant found that companies plowing back 3 to 4% of sales into research yearly tend to grow 10% a year. Evidently, the textile industry, which only recently regained a profit rate averaging 3%, cannot plow this amount right back without plowing itself under. But the industry can take heed of the current step-up in research activity.

Look at Table 1. You can see that more than half of the $9-billion spent in 1959 for industrial research was accounted for by the aircraft and electrical equipment industries—both heavily subsidized by federal defense funds.

For a more enlightening comparison, let's compare textile research with that in the paper and chemical industries. These are industries whose products and processes can either compete with textiles or contribute in some way to their development.

The trend of research performed by these three industries is illustrated in the chart (bottom of page 48), which is based on comprehensive surveys and reliable estimates.

Unfortunately, you can't get data on textile mills separate from apparel manufacturers. But the amount spent on research by the apparel industry is believed to be a small portion of the total. Hence, references to "textile research" in this story includes research done by apparel manufacturers, unless otherwise noted.

At the beginning of the 1950's, textile and apparel manufacturers were performing nearly $16-million worth of research and the paper industry only $11-million. At the end of the 1950's, textile research had more than doubled. But it was already several laps behind. The paper industry was performing $63-million worth yearly—six times the 1951 level, and twice the current level of textile research. In short, the paper industry has brought about a complete reversal of positions in 10 years.

You may object that the research picture presented so far has not taken into account the textile industry's support of research elsewhere. You are right. Figures quoted have been those most often used, and they show only the cost of research performed within laboratories and

. . . *Begins on page 48*

TABLE 2
How Much Three Industries Spend On Research and Development
(Percent of Net Sales)

	Textiles	Paper	Chemicals
1951 (est.)	0.10%	0.14%	1.4%
1953	0.14	0.33	2.1
1956	0.12	0.4	2.3
1959 (est.)	0.14	0.5	2.4

Sources: Research funds: BLS 1951, NSF 1953-1956, McGraw-Hill 1959. Sales: FTC-SEC Quarterly Reports.

plants of textile manufacturers. They do not reflect funds spent for research done at universities and commercial laboratories.

But the industry has lost ground to paper in outside research also. In 1956, the textile industry was hiring research elsewhere in the amount of over $2-million—a 64% increase over the previous year. And the paper industry in the same period boosted its investment in outside research by 146%, purchasing $3.5-million worth.

HOW MUCH IS SAFE?

Let's take a look at the common measure of research effort—proportion of net sales devoted to the search for new knowledge and applications (Table 2). Examined in the light of the usual 2% of sales as a "safe" research investment, the three industries are not impressive.

The commonly accepted 2% (by 1957 it was nearly 3% and may be higher now) was based on average cost of research performed within industry-owned facilities—not on expenditures of company funds. For example, research and development in the aircraft industry cost over $2-billion in 1956. But only 13% of this was paid for with company funds. This measure, therefore, makes no allowance for industries whose research is not heavily subsidized.

On close examination, you'll find that the true average cost for 1956 emerges as 1.3% of net sales for all industries, and 2.5% as the realistic figure for the aircraft industry.

But textiles, chemicals, and paper industries are all well above average in self-support. The chemical industry pays for 95% of its research. The paper industry is almost Ivory-pure, financing 99.05% of research it performs. And textiles pay 87.5%. (A breakdown of the sources of the remaining 12.5% is not available. But these sources no doubt include the federal government and some suppliers.)

You can compute the research effort in textiles, paper, and chemicals by staking company-financed research against net sales for these industries. (The latest figures available from the Federal Trade Commission and Securities & Exchange Commission are for 1956.) Here's what you'd find: textiles, 0.12% of net sales; paper, 0.4%; and chemicals 2.3%.

More revealing than the absolute percentage is the trend. Ignoring the source of funds (and this will be to the advantage of the textile industry), the paper and chemical industries have both been characterized by an accelerating research effort during the past decade. Take a look at the table of research and development performed in industry (see Table 2) expressed as a percent of net sales.

If you can make any generalization from these figures, it's that a company needn't spend 2% of sales on research to improve its position. The paper industry increased research activities from 0.14% of sales to 0.5% of sales in that 9-yr. period—still well below 2% of sales. But its jump from 0.14% to 0.5% is a boost of 257%—evidently sufficient to help raise paper sales from a level of 60% of textile sales in 1951 (excluding apparel) to 86% in 1959.

COSTS ARE UP

It will cost time and money for textile research to catch up. No exact information is available on how much the textile industry spent on capital equipment for research purposes during the past 10 years. But many companies in the paper industry report that equipment accounted for as much as 67% of their total research cost. And chemical manufacturers spent up to 82%. This will, of course, vary according to production requirements. But one thing is clear: The cost is up.

Personnel costs are up, too. A sample survey in 1951 indicated that the textile industry was spending between $10,000 and $20,000 per research scientist or engineer. By 1953 the industry average in larger firms had risen to $27,000 and by 1956 to $36,000. In commercial laboratories, where little production engineering takes place, research costs per engineer or scientist are about $16,000. And it is well known to textile personnel managers that they must meet higher starting salaries as well as intense competition to attract top graduates in science or engineering.

These trained people are essential to developing new discoveries.

TABLE 3

How the Textile Industry Compares with Other Industries, 1954 vs. 1959

. . . in Number of Engineers or Scientists in Research & Development

Textiles & apparel	—16.6%	fewer
Paper	31.0	more
Chemicals	10.3	more
All industries average	42.6	more

Source: NSF, 1959-1960

. . . in Number of Engineers and Scientists in All Activities

Textiles & apparel	8.1%	more
Paper	27.6	more
Chemicals	22.3	more
All industries average	28.4	more

Source: NSF, 1959-1960

Does the textile industry have them? Take a look at Table 3. It shows a dramatic trend away from research and development in textiles 1954-1957.

The textile field was the only one suffering so large a loss. Maybe you'll argue that these men went into sales or administration during those years. But here's some more information from the National Science Foundation for the same period: Textiles and apparel witnessed an 8.1% gain in the number of engineers and scientists engaged in all activities, while paper chalked up a 27.6% gain, chemicals a 22.3% gain, and all industries a 28.4% gain.

Highly trained personnel did enter other areas of the textile industry, but at a rate far below the industrial average.

It boils down to this: Reserves of the textile industry were actually drained at a time when not only its competitors but even its suppliers were expanding their forces. The industry will thus be confronted with increasingly complex materials and processes at a time when it lacks the export knowledge to translate them into profitable products.

WHAT'S THE FUTURE?

What's the future of textile research? Is time up, too? One answer for these questions: Estimate the time needed to market a new product or apply new techniques, from initial input of research.

A vice president of General Electric Co. recently made this remark:

"The time from a new scientific discovery to the cash register is seldom less than 5 years, and is not infrequently 10 years. A fairly representative period is 7 or 8 years. Hence one industrial research decision is easy to make: If you do not intend to be in business 5 years from now, there is no need for expenditures for scientific research—especially in the learning catagory."

Few textile firms allow 5 years. Measured by a recent survey, two-thirds of the textile industry looks for a payoff in less than 3 years, as compared to one-fourth of the paper and one-sixth of the chemical industries.

The impact of today's industrial research expenditure will be felt more severely in the future than at present. Assuming the 7-yr. payoff rule holds, today's textile products are competing with products developed by the $3½-billion industrial research effort of 1953. In 1967, textiles must compete with the results of 1960's input of over $9-billion.

Where, then, should textile research set its sights? This is a question to be answered by the industry itself. Figures on the cost of research and development do not automatically define a goal. Research programs suitable for paper and chemicals are not transferrable to the products and processes of textile manufacturing. Nor would all textile firms be interested in the same type of research.

As competitors and suppliers to textiles, those two industries have been used only to point up the sluggishness in textile research. Almost any other industry would have served the purpose, for with the exception of transportation and construction, all industries boosted their research efforts greatly during the last decade.

Nor should it be inferred that the textile industry is not alert to demand, for yearly it delivers thousands of new products in the form of innovations—even if there are only changes from charcoal-and-pink to gray-and-grape. What it faces now is rapidly changing technology. And it can't meet this change with traditional methods.

RESEARCH INCREASES

Textile leaders recognize this, and in the closing years of the 1950's there were signs that textile research was beginning to climb. Many individual companies increased their efforts, and some impressive textile research laboratories were built or planned. Textile colleges and government laboratories started some long-range fundamental studies with the support and cooperation of industry.

The same years produced new fibers and finishes and brought closer the possibilities of continuous, or massive, or even automatic processing—with attendant demands for uniformity and control.

It seems unlikely that the industry that started first will be content to remain behind long.

How You Can Get More From

Here are some simple formulas and a chart. They will make it easy for you to convert work-sampling data to ends-down per 1,000 spindle hours and ends-down per hank or pound.

WANT QUICKER evaluations of your work-sampling data for ends-down? They'll be yours with the formulas and chart on the following pages. What's more, you'll reap the benefits of:

- Over-all spinning-room control.
- More test data at lower cost.
- Better quality yarn.

With these aids—formulas and chart—you can quickly convert percent of idle spindles (work-sampling data) to ends-down per 1,000 spindle hours (standard-frequency test results). And you can determine ends-down per hank or pound.

Why is ends-down per hank or pound important? Because it gives consideration to the yarn number being spun, and this has an effect on the end-break rate.

By NORBERT LLOYD ENRICK
Associate Professor
School of Business Administration
University of Virginia
Charlottesville, Va.

COMPARING METHODS

With the conventional time-study method, your quality-control observer spends from 4 to 8 hours with one spinner. He notes occurrence of end-breaks and records the final result in terms of ends-down per 1000 spindle hours.

If your quality-control man uses the work-sampling method (repeated patrol-type walks at random through spinning room), he gets a periodic sample of ends-down over the entire spinning room. Your observer chooses a random path, but he makes sure that at the end of his walk he has covered all aisles. He records the ends-down as idle spindles in percent of total spindles for each yarn style, frame type, and operator.

One observer makes four to eight walk-throughs in a day. This way, he can easily cover the entire spinning room. In addition, the data he obtains are superior to the limited information obtainable with two or three frequency checkers operating in the conventional manner; that is, staying with one spinner for a long period of time and recording his ends-down.

Considerable cost savings and other benefits have been reported with the work-sampling approach to ends-down checking. And the number of yarn mills changing to this cost-saving system appears to be increasing rapidly.

USING THE DATA

The conventional approach yields data in terms of ends-down per 1000 spindle hours. But the work-sampling method yields data in terms of percent of spindles found to be idle because of an end-break. Therefore it's desirable to have a method of converting data from one system to the other without losing the accuracy of the data.

You can make these conversions quickly with the formulas at the left of the page.

But if you want to avoid all calculations for these conversions, you can use the ready-made reference

How to Convert Idle Spindles to Ends-Down

If you use the time-saving method of patrol walk-through and work sampling, which yields data in percent idle spindles, then you can use the formulas below to convert to the conventional ends-down per 1,000 spindle hours.

Definitions

E = Ends-down per 1,000 spindle hours.

I = Idle spindle's percentage.

W = Waiting time in minutes until spinner encounters and pieces broken end. This time is usually half of the spinner's cycle time.

Formulas for I and E

$$I = 100 \frac{W}{60} \times \frac{E}{1{,}000} = \frac{WE}{600}$$

Where: 60 converts minutes to hours and 1000 converts 1000 hours to a single hour. Solving for E, you find that:

$$E = 600 \frac{I}{W}$$

Example

Assume I equals 0.6% idle spindles and W equals 12 minutes. Then

$$E = 600 \times \frac{0.6}{12} = 30 \text{ ends-down per 1,000 spindle hours.}$$

Your Work Sampling

table shown below. When using this table (developed from the formula $E = 600\ I/W$) all you need do is locate the percent idle spindles, as determined by your work-sampling test, in the left-hand column. Then move horizontally across the table to the vertical column that indicates the spinner's time cycle. The number at the junction of these coordinates will be the ends-down per 1,000 spindle hours.

Here's an example: If the percent idle spindles is 0.8 and the spinner's cycle time is 30 minutes, then the ends-down per 1,000 spindle hours equals 32.

Rather than ends-down per 1,000

Quick and Easy Way to Find Ends-Down Rate When You Know Percent Idle Spindles

	Spinner's Cycle Time in Minutes																
% Idle Spindles	15	20	23	25	26	27	28	29	30	31	32	33	34	35	36	38	40
	Estimated Ends-Down per 1000 Spindle Hours																
0.1	8	6	5	5	5	4	4	4	4	4	4	4	4	3	3	3	3
0.2	16	12	10	10	9	9	9	8	8	8	8	7	7	7	7	6	6
0.3	24	18	16	14	14	13	13	12	12	12	11	11	11	10	10	9	9
0.4	32	24	21	19	18	18	17	17	16	15	15	15	14	14	13	13	12
0.5	40	30	26	24	23	22	21	21	20	19	19	18	18	17	17	16	15
0.6	48	36	31	29	28	27	26	25	24	23	23	22	21	21	20	19	18
0.7	56	42	37	34	32	31	30	29	28	27	26	25	25	24	23	22	21
0.8	64	48	42	38	37	36	34	33	32	31	30	29	28	27	27	25	24
0.9	72	54	47	43	42	40	39	37	36	35	34	33	32	31	30	28	27
1.0	80	60	52	48	46	44	43	41	40	39	38	36	35	34	33	32	30
1.1	88	66	57	53	51	49	47	46	44	43	41	40	39	38	37	35	33
1.2	96	72	63	58	55	53	51	50	48	46	45	44	42	41	40	38	36
1.3	104	78	68	62	60	58	56	54	52	50	49	47	46	45	43	41	39
1.4	112	84	73	67	65	62	60	59	56	54	52	51	49	48	47	44	42
1.5	120	90	78	72	69	67	64	62	60	58	56	55	53	51	50	47	45
1.6	128	96	83	77	74	71	69	66	64	62	60	58	56	55	53	51	48
1.7	136	102	89	82	78	76	73	70	68	66	64	62	60	58	57	54	51
1.8	144	108	94	86	83	79	77	74	72	70	68	65	64	62	60	57	54
1.9	152	114	99	91	88	84	81	79	76	74	71	69	67	65	63	60	57
2.0	160	120	104	96	92	89	86	83	80	77	75	73	71	69	67	63	60
2.2	176	132	115	106	102	98	94	91	88	85	82	80	78	75	73	69	66
2.4	192	144	125	115	111	107	103	99	96	93	90	87	85	82	80	76	72
2.6	208	156	136	125	120	116	111	108	104	101	98	95	92	89	87	82	78
2.8	224	168	146	134	129	124	120	116	112	108	105	102	99	96	93	88	84
3.0	240	180	157	144	138	133	129	124	120	116	112	109	106	103	100	95	90

spindle hours, you may be interested in more meaningful data, such as ends-down per hank or ends-down per pound.

Some mills prefer ends-down per hank or pound because this type of data gives consideration to the yarn number involved, which after all does have an effect on the end-break rate. (Ends-down per 1,000 spindle hours ignores the effect of yarn number.) If you want ends-down per hank or pound, you can make the conversion with the formula at the left of the page.

How to Determine Ends-Down per Hank or Pound

If, instead of ends-down per 1,000 spindle hours (E), you prefer to work with ends-down per hank or ends-down per pound, here's the conversion formula:

$$\text{Ends-down per hank} = \frac{E \times \text{inches} \times \text{yards per hank} \times \text{contraction allowance}}{1{,}000 \times \text{minutes} \times \text{front-roll rpm.} \times \text{diameters} \times \pi\ (3.1416)}$$

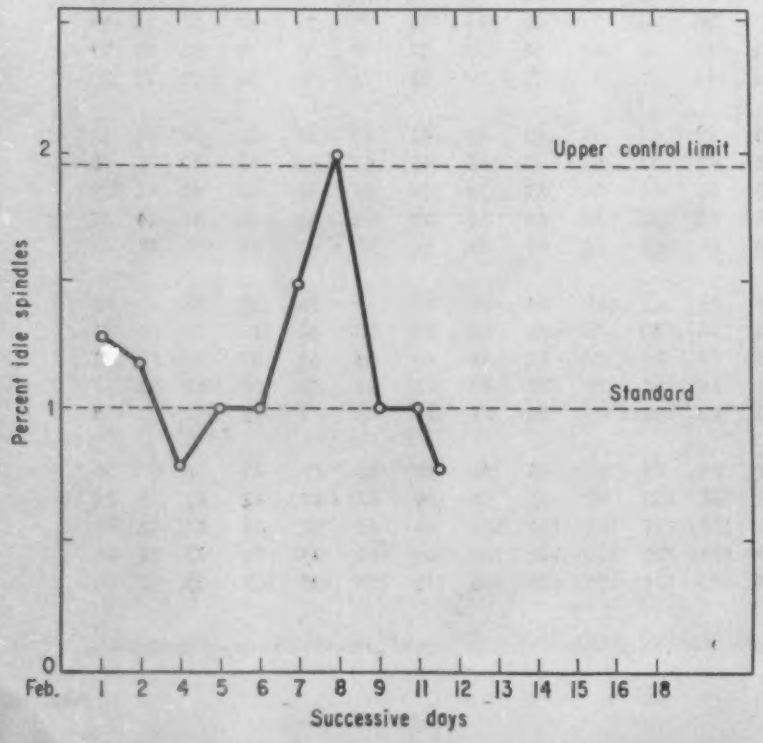
For example, with E = 30 and with a front-roll speed of 140 rpm., a 1-in. dia. roll, and 5% contraction:

$$\text{Ends-down per hank} = \frac{30 \times 36 \times 840 \times 1.05}{1{,}000 \times 60 \times 140 \times 1 \times 3.1416} = 0.036$$

Because this example used a 40s yarn, you must figure as follows to find ends-down per pound:

Ends-down per pound = 0.036 × 40 (yarn number) = 1.44

How to Plot a Day-by-Day Control Chart



APPLYING THE PRINCIPLE

In practice, work-sampling studies will provide you with continuous over-all surveillance of spinning-room running conditions. But if there is a large deviation from the normal rate of ends-down or idle spindles, you must make special checks and investigate the causes. If you can't make immediate correction, your time-study standards and assignments may need temporary revision until you can bring end-breaks under control.

A control chart (bottom left of page) will help you in routine idle-spindle control.

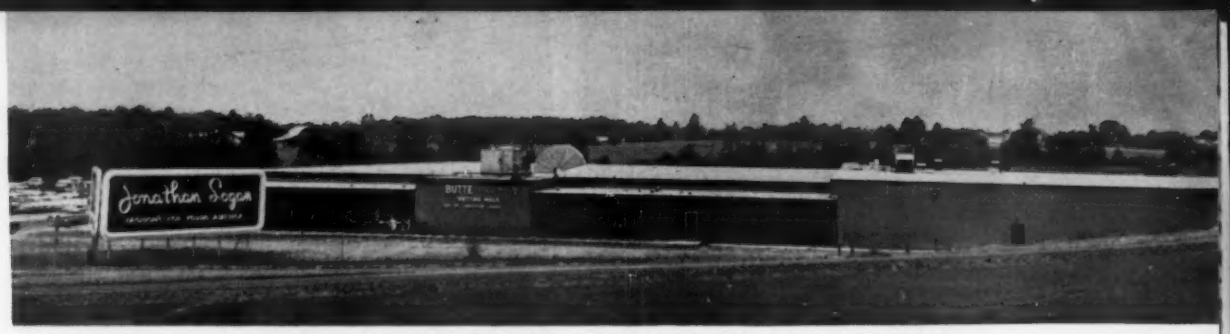
INSTALLING SAMPLING

When you first install work sampling continue with your conventional frequency checks for a while and compare the results. Often your comparison will indicate valuable information, such as:

1. The two sets of data may not agree, because the actual spinner's time cycle does not conform to the cycle developed in the time-study standard. A review of your time-study standard or a revision of your spinner's work procedures may be needed.

2. The work-sampling data may show a higher rate of ends-down than the conventional frequency checks because of an undue amount of "bad actor" spindles. These are spindles that continue to have an excessive proportion of end-breaks because of defects in the rolls, misalignments, or other mechanical trouble. Another study will quickly reveal the bad spindles, which you can then have repaired.

3. Some individual spinning frames may have higher ends-down rates than the remaining frames on the same yarn styles. Frames with high ends-down rate need repair of roll run-outs, misalignments, or other mechanical deficiencies.



BRAND-NEW plant is the first and only completely integrated double-knitting mill in the United States today.

The Butte Story: Part I

Knitting Quality Goods

Here's Part 1 of a two-part story on the first completely integrated double-knitting mill in the United States. Part 1 takes you on a picture-walk through the new plant and explains why this company decided to become fully integrated. Part 2 (page 86) gives you an inside look at the mill's new dyehouse—and an on-the-spot report about today's best practices in package dyeing.

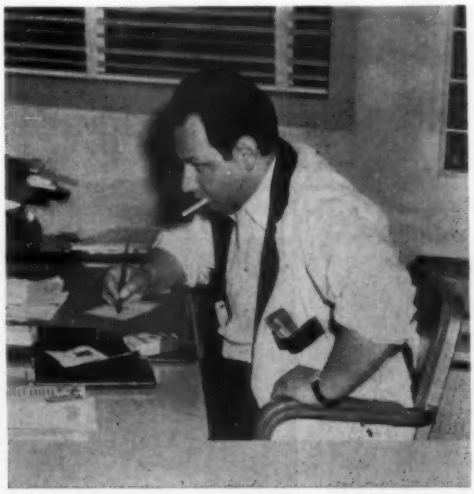
THIS large dress manufacturer wanted to get closer control over the quality of its yarn and cloth. What approach? Jonathan Logan, Inc., the company in question, decided on a do-it-yourself tack. The result is the first completely integrated double-knitting mill in the United States. It's the Butte Knitting Mill Division at Spartanburg, S. C. Butte represents Logan's first venture into fabric manufacturing on an all-out basis.

Take a look at the modern brick, steel, and concrete building. Within these walls—enclosing some 200,000 square feet of floor space—are seven major manufacturing departments: spinning (70s wool tops), dyeing, finishing, knitting, cutting, sewing, and shipping. In addition, these walls house offices, laboratories, shops, the boiler room, and other service departments.

Of the 200,000 square feet of floor space, Butte uses about 120,000 for knitting, 65,000 for yarn manufacturing, 10,000 for dyeing, and the remainder for other operations. Building and equipment cost? About $1.5-million.

Now, with this introduction, take a walk through the plant by means of the photos on these pages and see what an integrated double- knitting plant looks like.

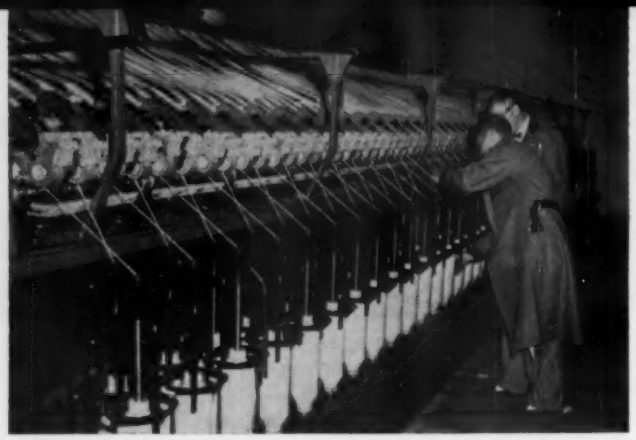
Want a look at Butte's new dyehouse? Turn to page 86 for Part 2: "Package Dyer's Dream."



TOP MANAGEMENT is in the hands of Andrew Teszler, president of the Butte Division. He's a graduate of Leicester College of Technology & Commerce in England and North Carolina State College School of Textiles at Raleigh.

For a photo tour of Butte's mill, turn the page ▶

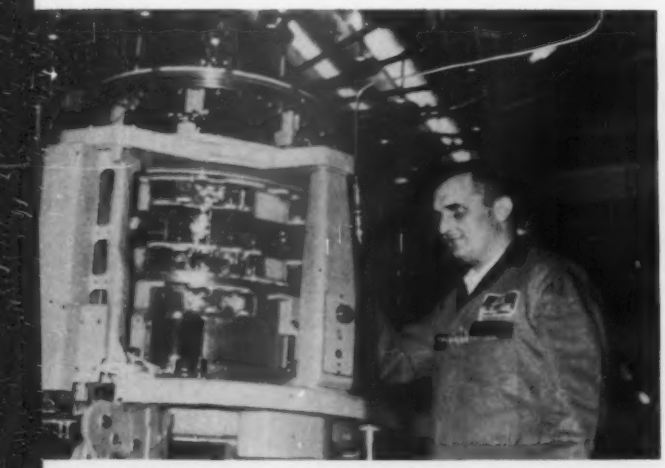
PIN DRAFTING—Two sets of Warner & Swasey three-system machines turn out about 40,000 pounds of stock per week.



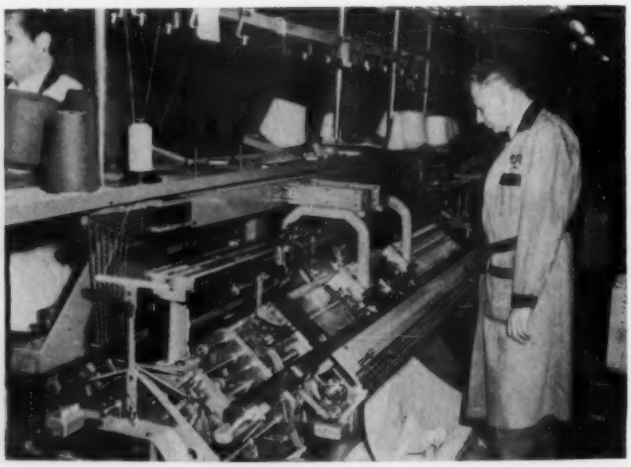
ROVING—Four Roberts 104-spindle roving frames have new-type flyers that permit machines to run up to 1,000 rpm.

THE BUTTE STORY
. . . Begins on page 55

⬆ Take a Look at Butte's



TUBULAR KNITTING—This battery of SPJ Bentley machines turns out 3,500 Orlon dresses a week, with 1x1 or 2x2 waist bands and cuffs. Edges are automatically finished.



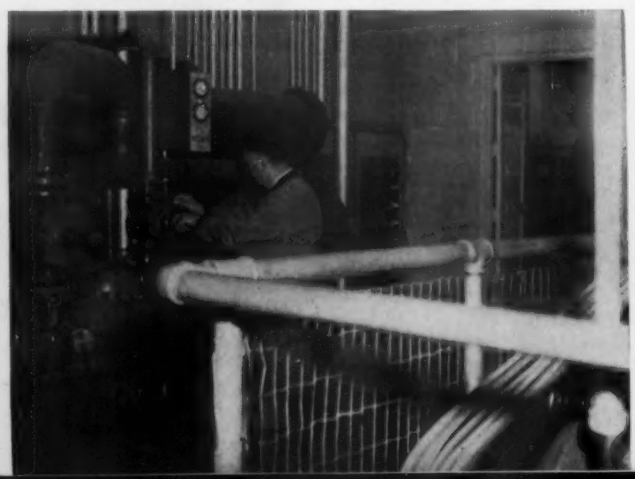
FLAT KNITTING—Stolle machines produce trimmings and collars for dresses. Full jacquard attachments give these double-lock type machines a lot of versatility.

⬆ Now Take a Walk Through

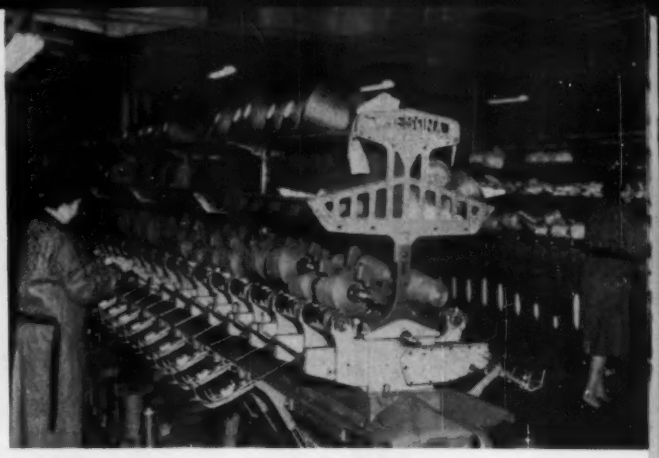
⬇ Next, Inspect the Plant's

MAINTENANCE—A staff of six runs the carpenter shop and attends to electrical and mechanical maintenance needs.

AIR CONDITIONING—This 150-hp. York air conditioner keeps plant temperatures at an average of 75 F. all year around.

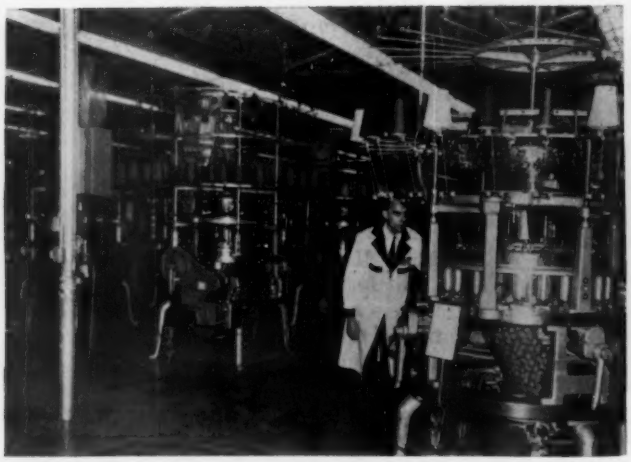


SPINNING—Eighteen Roberts long-fiber spinning frames (4,300 spindles) are now in use. Spindles run 8,500 rpm.

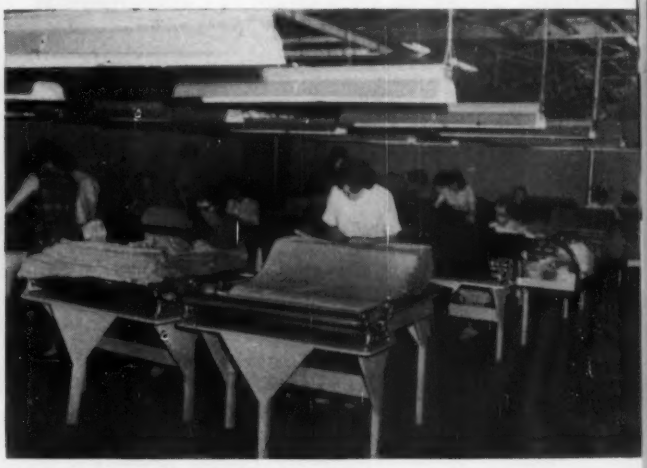


WINDING—Tubes and dye packages are made on four Leesona winders with an over-all total of 600 spindles.

Yarn Manufacturing Area



DOUBLE KNITTING—Battery of 44 plain-feed, 24 jacquard-feed cylinder and dial units produce 40,000 pounds per week. Machine makes: Mellor Bromley, Stibbe, and Meyer.

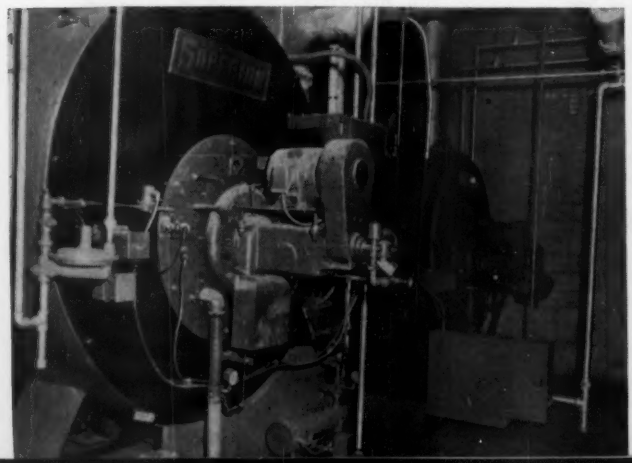


INSPECTION AND MENDING—All knitted goods are inspected and mended in this department. Quality-control records of machine performance (defects in fabric) are kept here.

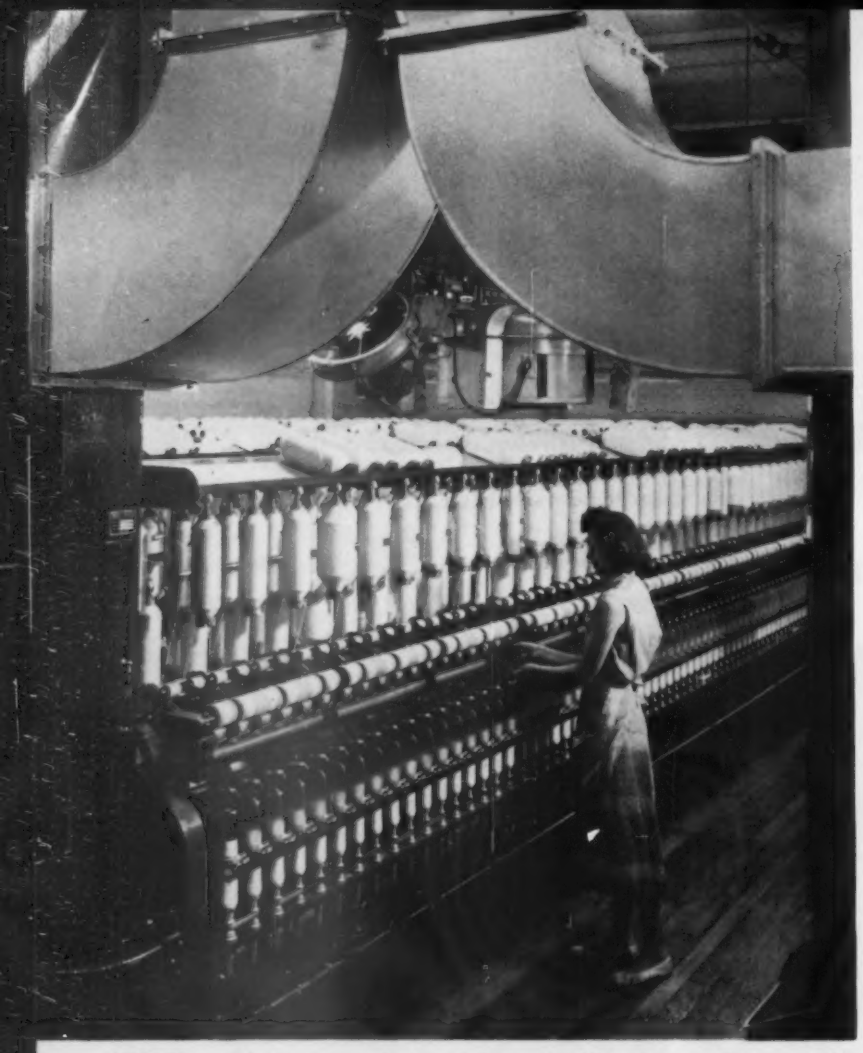
the Plant's Knitting Area

Manufacturing Service Areas

STEAM PRODUCTION—Two Superior boilers, producing steam for plant needs, have a total 350 horsepower.



QUALITY CONTROL—This department, supervised by J. Blum (right), keeps check on every process and machine in the mill.



TREND in spinning rooms is toward lower humidity. Many mills are adding refrigeration to reduce it to 45% or less without raising room temperature above 80 F.

What You Should Know About Air Conditioning

So you're planning to air-condition your mill. Don't jump in with your eyes shut. First there's a lot you should know about engineering problems, types of equipment, costs, and maintenance.

COMPETITIVE pressures for higher quality, lower costs, and greater efficiency make air conditioning a "must" in mills today.

Air conditioning costs money—big money in some mills.

As a mill manager, you must spend your company's money wisely. And the only way to be sure that you get the best system at the lowest cost is to investigate and plan before you select a single piece of equipment.

First, answer these questions:

- What temperature and humidity conditions will I need? What plus-or-minus tolerances can I afford? What effect will local climatic conditions have?
- What's the size and physical condition of my mill? Does it have windows? Are the ceilings high enough for ducts? Will I need more floor space?
- What tangible benefits will I realize? Better yarn? Greater machine efficiency? Higher operator morale? Fewer absentees?
- Do I have any special problems? If so, what are they?

These are just a few of the questions you should answer before deciding on any particular type of air-conditioning system. And here's something else you should think about: Air conditioning is not a cure-all for poor machine and operator efficiency, bad quality, or low employee morale. But it will help.

Let's assume you've come up with answers for the foregoing questions. You know in general what you want to accomplish—your requirements and your limitations. Your next move then is to study the systems and equipment available—the types that can do the best job for you at the lowest cost. Here, you should rely heavily on your engineering advisers. If you don't, you may have to choose between "swearing by" or "swearing at" your selection.

SIZING UP SYSTEMS

Air-conditioning systems can be classified generally as either unitary or central station. These two broad classifications cover everything from

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Consulting Engineer
Philadelphia 17, Pa.

the simplest type of atomizer to elaborate central-station installations. Here's a quick rundown:

Unitary systems—These are smaller than central-station systems and may operate independently of each other. You can spot them anywhere in the mill (usually hung from the ceiling). Chief advantage: They do not require an apparatus house.

Among the more common types are atomizers, window fans with atomizers, dry ducts with atomizers, air washers, Humiduct, and Rotaspray. (The last two are proprietary devices.) You can equip some of these to cool, heat, and wash air.

Central-station systems — These are usually large—and often complex—assemblies that condition air at one location and distribute it over a large area. Such systems require large fans and air washers. Frequently the basic system includes refrigeration, heating, air filtering, and electrostatic precipitation equipment. This kind of air-conditioning system usually requires an apparatus room or even a special building to house it.

But central-station equipment need not necessarily be massive. Some mills find it more economical to install several small central stations with scaled-down equipment than one large station.

CHECKING WHAT'S NEW

In deciding which basic system is best for you, don't forget to look into recent equipment advances. Some of these newer devices may be just what you need for your proposed system. Take a look at:

- Electronic and intermittent humidity controls that produce less variation in humidity.
- Anticlog washer nozzles and rotary water strainers that cut maintenance.
- High-velocity, lightweight unit air washers designed for multistory refrigeration.
- Automatic lint filters that remove fly from the air.
- Hinged eliminator blades for quicker cleaning.
- Noncorrosive metals and plastic materials that reduce repair and maintenance.

All of the systems and individual pieces of equipment have their good and bad points. And these points should be appraised realistically by engineering experience, not on the basis of some salesman's glib presentation. In other words, what is good for Mill A may not be good for Mill B.

REVIEWING YOUR NEEDS

Now that you have a pretty good idea of what kind of air-conditioning equipment is available and what it can do for you, take another look at your requirements. Your basic requirement, of course, is uniformity of humidity and temperature. This factor directly affects your first cost as well as operating and maintenance costs. Fact is, plus-or-minus tolerance will probably dictate the type of system you select.

Your first cost increases sharply with close tolerances. For example, the first cost of a weaveroom system designed to produce ±3% r.h. variation may cost 20% more to install than a system that produces ±6% r.h. variation. Maintenance cost is proportionate.

Good tolerances for major processes in the average cotton mill are:

Carding: ±3% r.h.

Spinning, winding, twisting: ±5 to 6% r.h.

Weaving: ± 3 to 4% r.h.

At first glance these tolerances may appear to have too much spread. But these are realistic figures based on a lot of experience, not on wishful thinking. Suppose you want to hold your spinning room air as closely as possible to 45% r.h., and you have just installed System C (see table) that calls for ±4 to 5% tolerance. Chances are the r.h. near the controls would read 44 to 46%. But if you take readings (say 100 of them) all over the spinning room, you'd get anywhere from 40 to 50%—a spread of ±5% on either side of the desired 45%. You can have closer tolerances—if you can pay the price.

SELECTING A SYSTEM

An example of first cost, maintenance cost, and operating cost as related to r.h. tolerances is shown in the accompanying table on this page. These are actual figures showing the choices among systems that recently confronted a cotton mill with 38,000 spinning spindles and 1,400 looms. All three systems (A, B, C) are evaporative-cooling types. System A consists basically of dry ducts with atomizers. System B is a supersaturator type of unit conditioner. System C is a central air washer with atomizers.

The mill decided to purchase System B for its spinning room and System C for its weaveroom. Engineering considerations—such as the problem of providing an apparatus house or adding refrigeration—were the deciding factors here rather than cost. The comparative cost figures, while important as a guide in selection of equipment, do not necessarily prove that any one of the systems is best for the room in question.

If you are confronted with a similar set of circumstances, rely

What Three Types of Evaporative Cooling Will Cost
(Cotton mill with 38,000 spindles and 1,400 looms)

System	± Variation (% r.h.)	First Cost	Operating Cost (annual)	Maintenance Cost (annual)	Operating and Maintenance Cost (total)
		Spinning Room (45% r.h.)			
A	6 to 7	$48,000	$8,700	$895	$9,695
B	5 to 6	53,000	5,100	3,740	8,840
C	4 to 5	74,000	7,800	1,341	9,141
		Weaveroom (75% r.h.)			
A	6	$198,000	$16,050	$2,050	$18,100
B	4	184,000	9,720	16,600	26,320
C	3	221,000	15,740	2,250	17,990

System A, dry ducts with atomizers. System B, entrained moisture units. System C, central air washer with atomizers.

heavily on your engineer's recommendations. For example, if you plan to add refrigeration later (as in the case cited) you may save a lot of money by installing a large central air washer instead of a unit system. It's cheaper in the long run. On the other hand, the layout of your mill and required tolerances may make a unit system imperative. Only your engineer can decide which system is best for you.

Refrigeration is the "hottest" thing in air conditioning today. In selecting a system be sure that whatever type you choose can be adapted to refrigeration. Why? Because increased spindle and loom speeds, high drafting, improved sizing methods, greater use of hydrophobic man-made fibers, and other technical advances call for lower humidities. And with evaporative cooling, lower humidities mean higher temperatures—and lower operator morale. Also, too much free moisture can cause all sorts of trouble such as lap-ups at carding and spinning. Modern traveling cleaners amplify the problem by blowing water into the stock.

DETERMINING COSTS

The first cost of air conditioning is easier to determine than maintenance and operating costs. But it's not simply a matter of accepting the lowest bid from a contractor. First, you've got to get together with your supervisory staff and plant (or consulting) engineer and decide what degree of cooling, uniformity of humidity, and filtering you want. When you set up your desired conditions and tolerances, have your engineer draw up specifications for contractors to bid on. If low bid is satisfactory, it's your first cost.

A word of caution: This easily determined first cost should not necessarily be a deciding factor in selecting a system. Engineering decisions may be much more important. And don't forget operating and maintenance costs. All of these factors are interrelated.

When you ask for bids from air-conditioning contractors, be sure you understand that the normal bid is for a "complete" job. The figure usually includes work to be done by subcontractors. Such outside work may include cutting and patching, installing feed and drain lines, electrical service, bricking up windows, insulating roofs, and constructing apparatus houses or bases.

Why are operating and maintenance costs much harder to determine than first costs? Because what one man calls good practices are considered poor by another. Also, maintenance in natural-fiber mills varies more than in man-made-fiber mills because of differences in fiber properties, machinery, and end products. In final analysis, good maintenance depends on proper atmospheric conditions that produce the best quality and highest efficiency from productive equipment.

Maintenance costs frequently can be reduced substantially by increasing first costs. How? By simply including labor-saving devices in your initial installation. For example, a $1,600 rotary lint cleaner installed on an air washer can save up to 520 man-hours of cleaning time per year. To omit such relatively inexpensive labor-saving devices is obviously poor economy.

Operating costs are directly proportional to the type, size, and complexity of the equipment you select. About the best thing you can do here is to use good judgment and keep your eyes open. Don't let some smooth salesman convince you that it will cost you more to keep his competitor's equipment clean—while he says nothing about the higher electrical cost required to operate his own equipment.

MAINTENANCE—A MUST

You must set up a good maintenance department if you expect to get the most from your air conditioning. And good maintenance men don't just happen. They require special schooling and study. Send your crew to the schools operated by manufacturers of equipment and controls. See that they study the operating and maintenance manuals that come with major pieces of equipment. Natural mechanical ability is not enough.

Once your crew is trained, its first duty should be to conduct complete acceptance tests when the manufacturer hands over the equipment. These tests are extremely important. Results should tell you (1) that the contractor is living up to his guarantees, (2) what the system is capable of doing while new, and (3) what to expect in its future performance. If this procedure is followed, your maintenance people at some later date won't be as likely to say, "It never did work right."

Another early duty of the maintenance department (or plant engineer) should be to employ water-treatment specialists to test the water supply and recommend necessary treatments. Otherwise, corrosive elements, algae, and slime will foul up your new system almost before it's in operation. There's no shortcut to water treatment; chemical experience is essential.

Once you're sure your air-conditioning system is functioning properly, see that the plant engineer develops log sheets that will keep both of you up to date on the system's performance. Normal operations are determined by comparison of log readings. When readings vary beyond limits, it's time for corrective action. Next, regular maintenance schedules should be set up and frequencies worked out for each operation. Schedules should include:

1. Checking and setting controls and recorders.
2. Cleaning, adjusting atomizers.
3. Collecting and testing water samples.
4. Cleaning grills, outlet nozzles, return air screens, water screens, and filters.
5. Checking performance of air compressors, pumps, and refrigeration machines (noting temperature and pressure data on log sheets).
6. Taking and recording uniformity of temperature and humidity readings.
7. Lubricating equipment.
8. Cleaning, painting, overhauling equipment.

Spare parts: Your maintenance department should stock a reasonable supply of spare parts, especially key items. But personnel should be instructed not to rely too heavily on these parts.

SPINNING uses overhead creels for roving bobbins. Normal take-up is 5% on 60s worsted count. Argonne checks quality daily.

Sure Route to . . .

Better Worsted Yarn

Want to improve sliver variation? Reduce downtime? Control waste? Increase output? Here are sure-fire formulas from an expert, who tells the story of his own mill and its progress.

TWO STEPS are the key to getting better worsted yarn here at Argonne Worsted Co.:

1. Using draft take-up as part of our original draft layouts.

2. Using our short-cut production formulas.

These two steps give us . . .

. . . *draft layouts* that need little or no change at the overseer's level.

By ARTHUR J. GAGNON JR.
Supervisor of
Quality Control Job Evaluation,
Argonne Worsted Co., Manville, R. I.

. . . *better control variation* in sliver and yarn.

. . . *improved production flow* between operations.

. . . *less operator downtime.*

. . . *less waste* (by controlling package size for more even runouts).

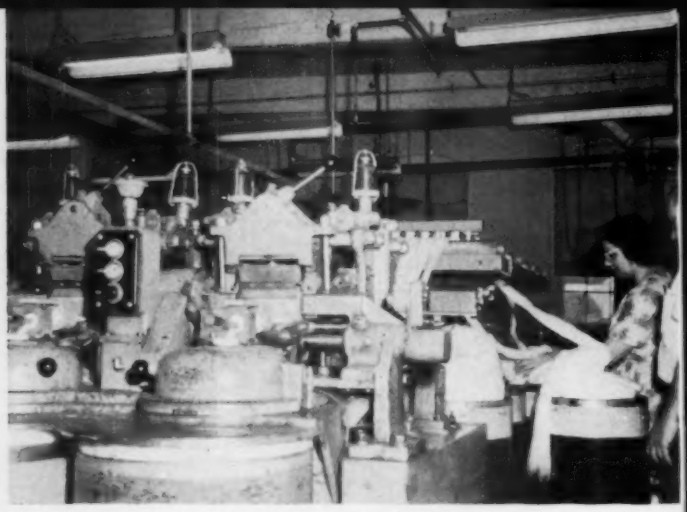
We used to make draft layouts without considering take-up, and we left draft-gear manipulations to the overseers, along with determination of machine speeds and package sizes. We continually lost time in adjusting theoretical layouts to working drafts. Later, through a production survey, we found the flow of work to be below what it could be, too.

So we evaluated our machines and found that we could predetermine drafting take-up for each operation and make it a part of the original draft layouts.

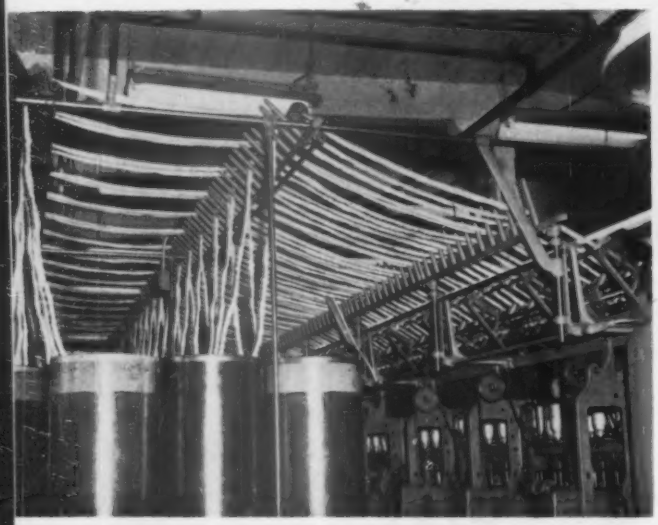
Here are the details and formulas we used. They worked in our mill. They can work in yours, too.

. . . *Turn the page*

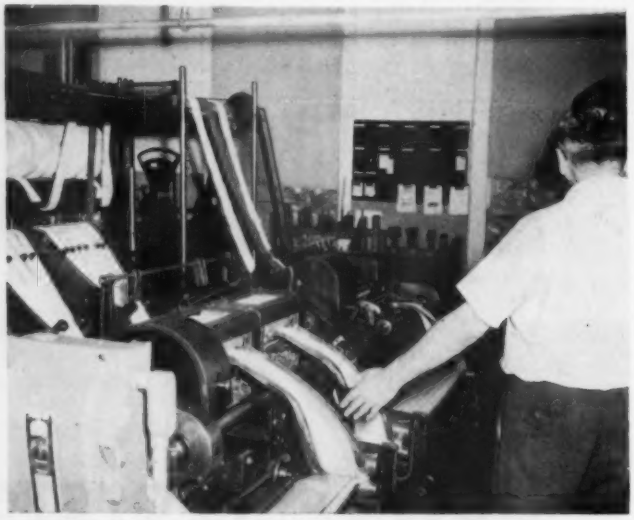
BLENDING tops is the first drawing operation. This blender automatically adjusts the draft for input sliver variation.



PIN DRAFTING on this weight box is control point for sliver variations. Machine uses a predetermined yardage counter.



DRAWING goes at a front roll speed of 160 rpm. Frame has a 3-shift hank meter to determine output and production flow.



BLENDING cotton and wool is done on this converted gill box. Short cotton fibers are sandwiched between layers of wool.

BETTER WORSTED YARN . . . *Begins on page 61*

DETERMINING TAKE-UP

When you put four ends of 250-grain sliver into the Pin Drafter and use a draft of 8.0, the resulting sliver should weigh 125 grains per yard. But in actual production the Pin Drafter sliver weighs more—about 132 to 134 grains per yard. This means that our actual machine draft is about 7.6 (even though our gears are set to produce a draft of 8). This difference between theoretical and actual draft is take-up. It's why we make take-up a part of calculations when we plan our drawing layouts.

There's no set formula for figuring take-up, because it varies with twist, bulk, and type of fiber. We figure this way: We calculate percentage take-up (for each drafting operation) during the production of standard constructions. With the take-up information available, all our future theoretical draft layouts are equal to actual production. And we eliminate the trial-and-error method of executing drawing diagrams. This method leads to poor sliver and yarn quality.

Drafting take-up—This is the aftermath of attenuation. Each machine pulls the sliver or roving in the drafting zone to reduce its size. This drafting applies tension to the fibers. At this point (in the draft zone) the sliver weighs exactly what it should—it's equal to the theoretical calculations. But when the sliver leaves the front rolls (delivery rolls), the tension is released and the fibers relax. When the fibers relax they contract and the resulting sliver (or roving) weighs more than the theoretical calculations indicate.

Here's the formula for what happens:

Percent take-up equals actual weight per length minus theoretical weight per length times 100, *all divided by actual weight per length.*

Take an example:

A Pin Drafter uses 4 doublings per delivery. Each sliver weighs 250 grains per yard. The machine is set for a draft of 7.6, so that the drafted sliver should weigh 131.58 grains per yard:

$$\frac{4 \times 250}{7.6} = 131.58 \text{ gr. per yd.}$$

But in actual production the drafted sliver weighs 140 grains per yard. So the take-up is 6%.

$$\frac{140 - 131.58}{140} \times 100 = 6\%$$

The effective draft of the Pin Drafter is 7.14 (original draft minus the effect of take-up).

Twisting take-up—This is the shortening of yarns when twist is added (or yarns are plied). All twist shortens the yarn or roving. But when yarns are plied, the percent take-up, or shortening, is more pronounced.

Here's the formula:

Percent take-up equals original length minus final length times 100, all divided by original length.

Here's an example:

A 10-in. sample length (final) of a particular size roving has 1.2 tpi. Untwisting the roving yarn on a twist counter results in a length of 10.56 inches (original).

$$\text{Take-up } (\%) = \frac{10.56 - 10}{10.56} \times 100 = 5.3\%$$

LAYING OUT DRAFT

In the preparatory operations at Argonne's mill (doubling and drafting before spinning) we use the American system. We find this system more flexible for our type of production—various wools as well as wool blends with mohair, man-made fibers, and cotton. A typical blend is a 55% Dacron and 45% wool, spun to 1/60s worsted yarn. We set up the drawing operations to make a 4.3 hank roving (116 grains per 40 yards). The table on the right lists our drafting operations:

BALANCING FLOW

Once we establish good working layouts, we continue our investigations somewhat as follows:

"Do we have a balanced set?"

. . . *Turn the page*

How to Eliminate Trial and Error Draft Layouts

	Predetermined Take-Up	Efficiency
1. Auto-Leveler, Holdsworth (HAL)	7.0%	63%
2. Weight-Box, Dual Pin Drafter (WPD)	7.0%	70%
3. Intermediate, Dual Pin Drafter (IPD)	4.5%	76%
4. Finisher, Quad Pin Drafter (FPD)	3.5%	81%
5. Rover, Quick-Set Rover (QSR)	5.0%	68%
6. Spinning	5.0%	87%

In calculations below: Numerator = doublings or doublings and take-up; denominator = draft.

Just below is a theoretical drafting layout that doesn't consider take-up. The doubling weight averages 293 grains for the Auto-Leveler.

$$293 \text{ gr.} \times \underset{\text{HAL}}{\frac{10}{8.0}} \times \underset{\text{WPD}}{\frac{3}{8.4}} \times \underset{\text{IPD}}{\frac{5}{7.76}} \times \underset{\text{FPD}}{\frac{4}{7.4}} \times \underset{\text{QSR}}{\frac{1}{15.2}} \times 40 \text{ yds.} = 120 \text{ grains per 40 yds.}$$

Grain weights per yard	366	131	84.4	45.6	3.0

$$\text{Hank roving} = \frac{500}{120} = 4.17$$

The theoretical spinning draft would be:

$$\text{Spinning draft} = \frac{\text{worsted count}}{\text{worsted hank roving}} = \frac{60}{4.17} = 14.4$$

Let's look at the same layout using the predetermined take-up we settled upon for each drawing:

Actual Draft Layout

$$293 \text{ gr.} \times \underset{\text{HAL}}{\frac{10(1.07)}{8.0}} \times \underset{\text{WPD}}{\frac{3(1.07)}{8.4}} \times \underset{\text{IPD}}{\frac{5(1.045)}{7.76}} \times \underset{\text{FPD}}{\frac{4(1.035)}{7.4}} \times \underset{\text{QSR}}{\frac{1(1.05)}{15.2}} \times 40 \text{ yds.} = 156 \text{ grains per 40 yds.}$$

Grain weights per yard =	392.0	150.0	101.0	56.5	3.9

$$\text{Hank roving} = \frac{500}{156} = 3.2$$

$$\text{Spinning draft} = \frac{60\ (1.05)}{3.2} = 19.7$$

You can see a significant difference between the theoretical and the actual layout. Note the difference between roving grain weights and the spinning drafts. In the actual layout the spinning draft required is 19.7, which is too high for our type of spinning. Therefore in our next calculation we change the drafts in the actual layout and make it a practical working layout. As we make the draft changes, we use the new draft that corresponds to a specific draft gear for each machine.

Below is the final revised working layout:

$$293 \text{ gr.} \times \underset{\text{HAL}}{\frac{10(1.07)}{8.56}} \times \underset{\text{WPD}}{\frac{3(1.07)}{8.56}} \times \underset{\text{IPD}}{\frac{5(1.045)}{8.9}} \times \underset{\text{FPD}}{\frac{4(1.035)}{7.9}} \times \underset{\text{QSR}}{\frac{1(1.05)}{15.7}} \times 40 \text{ yds.} = 112 \text{ grains per 40 yds.}$$

Grain weights per yard	366.0	137.3	80.6	42.2	2.8
Draft gear	54	35	34	38	33

$$\text{Hank roving} = \frac{500}{112} = 4.46$$

$$\text{Spinning draft} = \frac{60\ (1.05)}{4.46} = 14.1$$

This layout works for a range of counts from 50 to 70. All adjustments are made in the draft.

We ask ourselves. "Does the output of each operation supply the needs of each successive machine?"

We determine production flow for each operation. An unbalanced set can be traced to poor production planning. Often excessive operator downtime is due to incorrect output and improper-size packages from previous operations. These conditions cause a sharp increase in operating costs. If improper production flow persists, it will disrupt other departmental outputs and eventually lead to late deliveries.

Just determining the theoretical output of each operation is not enough to balance a drawing set. To avoid problems in planning (such as the theoretical layout), we have to know the approximate efficiency of each machine used in our operation.

We determine these operating efficiences by conducting periodic time studies or by installing a hank meter on each machine. Here at Argonne each machine has a hank meter. In addition we get operating data from our production-control system.

The hank meter offers a quick, easy method for determining machine efficiency. We take daily records from each operation on each shift. One month's data are enough to determine working efficiencies. The efficiencies based on different size hank and fiber composition are checked periodically and are then revised.

USING LINEAR SPEED

Linear speed is very important for good production flow. It is related to the working layout and efficiency of each preparatory process. In each process, linear speed must take account of the number of deliveries and size packages. Why? Because actual production varies with each different speed and for each different bulk. And the degree of variation differs with each quality.

At Argonne, linear speed involves the Quick-Set Rover and spinning frames. Our Pin Drafters and the Auto-Leveler have fixed faller drops, where the weight per unit length is the factor.

There are many overseers who associate an increase in linear speed with more production. This is not always true.

For example, a Quick-Set Rover making a yarn weighing 3.3 grains per yard (3.8 hanks) at a front-roll speed of 160 rpm. delivers an average size package of 1.3 pounds for this particular composition. Here's what a time study told us: The average downtime per doff is approximately 0.80 hour. This includes creeling a new set of 70 cans, doffings, cleanings, piece-ups, ends-down, miscellaneous stops, runout, and operator's fatigue factor. This is the formula:

$$T = \frac{A \times B \times C}{D \times E \times F \times G}$$

T = Theoretical running time in hours per doff.
A = Average net weight of delivered size package (1.3 pounds).
B = 36 inches in one yard.
C = 7000 grains per pound.
D = Circumference of front roll ($2 \times 3.14 = 6.28$)
E = Front-roll rpm. (160)
F = Grains per yard of delivered yarn = 3.3 (3.8 hanks)
G = 60 minutes per hour

$$\frac{1.3 \times 36 \times 7000}{6.28 \times 160 \times 3.3 \times 60} = 1.64$$

Theoretical number of doffs per 8 hours:

$$\frac{8}{1.64} = 4.88$$

Actual number of doffs per 8 hours:

$$\frac{8}{1.64 + 0.80} = 3.28$$

Machine efficiency:

$$\frac{3.28}{4.88} \times 100 = 67.2\%$$

With these findings in hand, we increased the front-roll speed from 160 to 200 rpm. while maintaining the same hank roving. This increase in linear speed gives an approximate average downtime of 1.08 hours per doff. Increasing the speed means more doffing, miscellaneous stops, and shorter cycles for runouts and creeling in a new set (70 Quad cans).

The theoretical number of doffs per 8 hours is calculated at 6.1. The actual number of doffs per 8 hours is 3.35, resulting in a general frame efficiency of 54.9%. Let's compare output at these two different speeds.

1. Production per hour at a front-roll rpm. of 160 at 67.2% efficiency:

$$70 \times \frac{160}{3.8} \times 1.87 \times 10^{-2} \times 0.672$$
$$= 37.0 \text{ pounds}$$

2. Production per hour at a front-roll rpm. of 200 at 54.9% efficiency:

$$70 \times \frac{200}{3.8} \times 1.87 \times 10^{-2} \times 0.549$$
$$= 37.8 \text{ pounds}$$

This example clearly shows that at times an increase in linear speed will lower the operating efficiency and not always give more production. Also, uneven sliver and yarn can be attributed to speeds beyond the machine's designed capability and are a warning that the operator is overloading.

SHORT-CUT FORMULAS

At the Argonne mill we have developed short-cut formulas to calculate production for all our operations. These formulas use a Production Constant (PC) that eliminates lengthy calculations by condensing all constants into one constant. On the spinning frame and Quick-Set Rover we use a formula based on the front-roll speed:

Pounds per hour equals spindles times front-roll speed divided by hank or count, times Production Constant, times efficiency.

This same formula works for doublers, winders, and twisters. It's not limited to worsted equipment either, because it works on cotton and man-made equipment.

Below is how we derived the formula for our spinning and roving. You can do the same for any linear-speed unit.

Production Constant equals front-roll diameter in inches times 3.1416, (π) times worsted base (12.5), times 60 (minutes), all divided by 36 (inches) times 7,000 (grains).

On the Pin Drafter, Auto-Leveler, or gill box the Production Constant is determined a little differently, because these machines use fixed faller drops.

Here's the formula:

Pounds per hour equals Production Constant times number of doublings, times grains per yard of doubling, times efficiency.

We developed the Production Constant for a four-delivery Pin Drafter as follows:

Lead of faller screw = 5/16 or 0.3125 inch.
Faller drops per minute = 1062

$$\text{Yards per minute} = \frac{0.3125 \times 1062}{36 \text{ (inches)}} = 9.2$$

$$\text{PC (4-delivery)} = \frac{4 \text{ (delivery)} \times 9.2 \text{ (ypm)} \times 60 \text{ (minutes)}}{7000 \text{ (grains)}} = 0.315$$

3. You can use his type of derivation for your Production Constant and save considerable time for calculating machine production.

BALANCING DRAWING SET

We start our planning as soon as we get the new order memo. We must creel a new order gradually into a set without disturbing the current flow of other lots. Keeping past records of similar layout flow helps our planning for the most efficient flow of new orders.

There is no set rule in executing orders. They vary with the different overseers and depend on the scheduled deliveries. But let's assume an order calls for 2000 pounds of 1/60 worsted count, composed of 45% wool and 55% Dacron. Here's how we determine machines required:

Number of possible spinning frames:

$$\frac{2000}{1.3 \times 220} = 7$$

Number of roving bobbins needed for the operation in question:

$$7 \times 220 = 1540$$

Number of spinning doffs per roving bobbin (capacity of one spinning bobbin = 0.187 pound):

$$\frac{1.3}{0.187} = 7.0$$

Number of necessary spindles for the Quick-Set Rover (net 19.5-lb. cans from the third-operation Pin Drafters):

$$\frac{2000}{19.5} = 102.6$$

We didn't do exactly what our figures indicated we should do. Instead we set up one full Quick-Set Rover having 70 deliveries with Pin-Drafter cans weighing 19.5 pounds (1,365 pounds). We set up the remaining portion (635 pounds) on 35 deliveries (total 105, instead of 102.6) on another QSR, with Pin-Drafter cans weighing approximately 18.2 pounds. We tried to reserve the second QSR to run out similar lots.

Number of doffs from QSR for Pin-Drafter cans weighing 19.5 pounds:

$$\frac{19.5}{1.3} = 15$$

For Pin-Drafter cans weighing 18.2 pounds:

$$\frac{18.2}{1.3} = 14$$

Packages of the proper size mean even runouts with minimum waste. Improper size packages result in poor runouts, high percentage of waste, delays in starting other lots, and increases in direct-labor costs.

From the tabulated production of each Pin-Drafter operation, the first operation is able to furnish one dual and half of another for the second operation. The second operation can furnish one quad and one dual for the third operation. The third operation Pin Drafters gradually build up a set of cans for one Quick-Set Rover and half for another.

We usually keep the draft on the second-operation Pin Drafters fixed to process other lots. The first, second, and third operations constitute one drawing set of Pin Drafters.

The Auto-Leveler is a separate part of our blending unit. It's operated as needed and easily supplies the first operation of the Pin Drafter for this set.

Usually we plan for drafts, weights, doublings, and linear speeds all at the same time. But in this instance, we calculated them separately to show the significance of take-up.

At Argonne we check each operation daily. We weigh 120 yards for spun yarn, 40 yards for the roving, and 5 yards per delivery on the Pin Drafters and Auto-Leveler.

SETTING THE RATCH

A word about setting the ratch on the Quick-Set Rover and spinning frame.

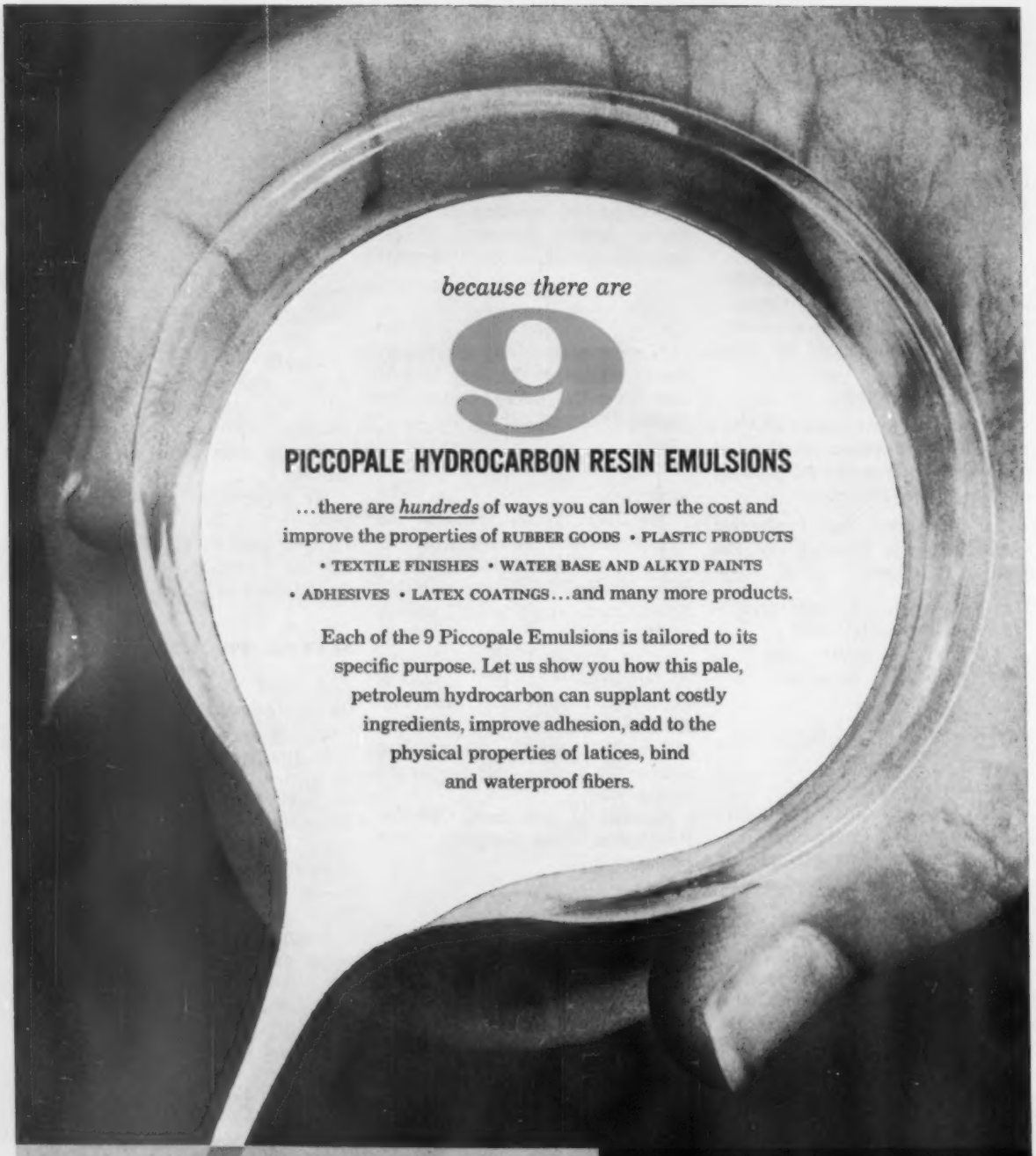
If you process sliver and yarn on a fixed ratch over a large range of hanks composed of different fibers, the result will be unevenness, slubs, and poor spins. Evenness from attenuation processes depends on the proper input, ratch, and linear speed.

Setting the ratch requires individual experience applied to different problems. The usual practice in judging top, sliver, and roving yarn for length and quality is to do a hand staple array on a black plush board. This array will show the percentage of stray fibers, maximum length, mean length, and short fibers. You need this data to determine the best setting for the ratch.

If the stray fibers are solely broken on the spinning frame, the yarn will be curly or fibrous. If the ratch is set to the length of the small percentage of these long fibers, then control of the main distribution and short fibers is lost and that will surely result in uneven yarn.

You should gradually break these fibers—first on the Quick-Set Rover and finally in the break-draft section of the spinning frame.

Result: the best in quality yarn.



because there are

9

PICCOPALE HYDROCARBON RESIN EMULSIONS

...there are *hundreds* of ways you can lower the cost and improve the properties of RUBBER GOODS • PLASTIC PRODUCTS • TEXTILE FINISHES • WATER BASE AND ALKYD PAINTS • ADHESIVES • LATEX COATINGS...and many more products.

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- **A-22** an acid-stable emulsion, for polyvinyl acetate systems
- **A-41** for special adhesives
- **A-43** for improved wet and dry strength of non-vulcanized SBR latices
- **A-55** for SBR and natural rubber latex in vulcanized systems
- **C-1** a cationic emulsion for heavy fiber boards and wet end sizing
- **N-3** for non-ionic applications and as a stabilizing emulsion

WRITE for complete technical data on Piccopale Hydrocarbon Resin Emulsions...and for your free copy of

OUR NEW 12-PAGE PICCOPALE EMULSION CATALOG

PENNSYLVANIA INDUSTRIAL CHEMICAL CORPORATION

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TEXTILE WORLD
Vol. 111, No. 11
November 1961

CHEMICAL TREATMENT AND FINISHING

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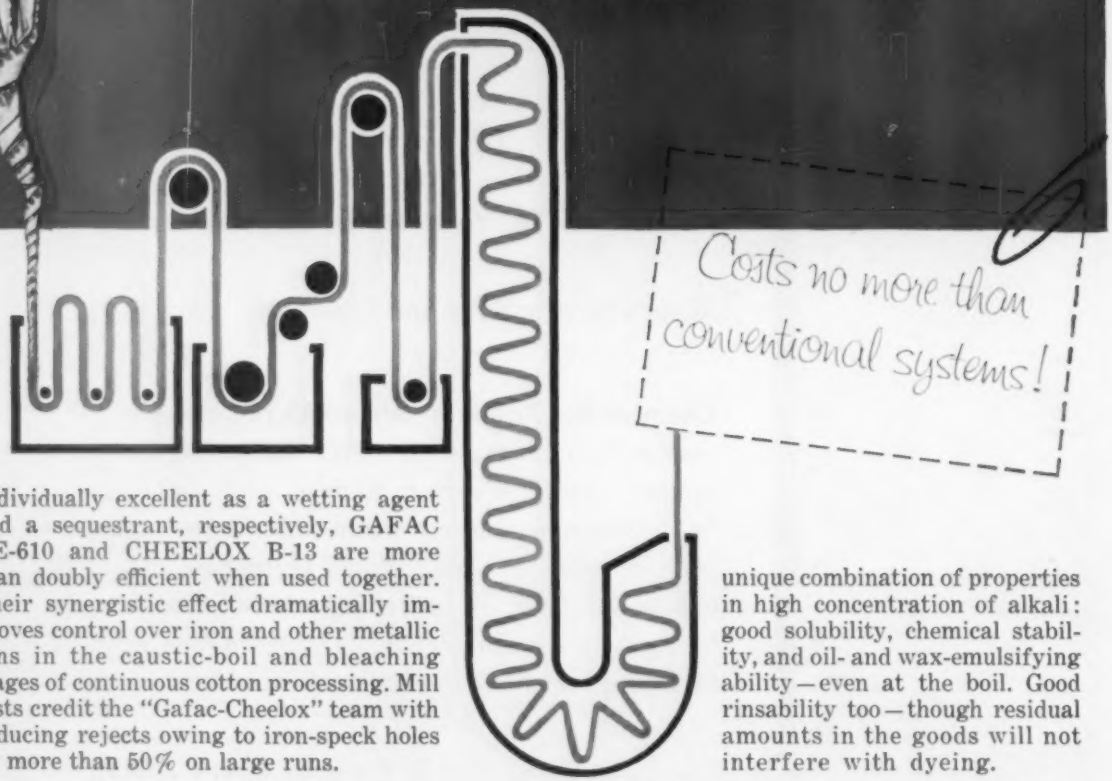
GAFAC® RE-610 wetting agent with CHEELOX® B-13 sequestrant

can cut rejects 50% or more in continuous bleaching of cotton goods



Individually excellent as a wetting agent and a sequestrant, respectively, GAFAC RE-610 and CHEELOX B-13 are more than doubly efficient when used together. Their synergistic effect dramatically improves control over iron and other metallic ions in the caustic-boil and bleaching stages of continuous cotton processing. Mill tests credit the "Gafac-Cheelox" team with reducing rejects owing to iron-speck holes by more than 50% on large runs.

GAFAC RE-610 phosphate ester is a new 100%-active anionic surfactant offering a unique combination of properties in high concentration of alkali: good solubility, chemical stability, and oil- and wax-emulsifying ability—even at the boil. Good rinsability too—though residual amounts in the goods will not interfere with dyeing.

GAFAC RE-610 and other GAFAC surfactants are effective at various other stages in the processing of cellulosic and synthetic-fiber yarns, piece goods, and hosiery. Write for data sheet TA-63 entitled "GAFAC Surfactants in Textile Processing."

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From Research to Reality

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News of the Month in . . .

Textile Chemicals

By ROBERT W. PINAULT, Associate Editor, TEXTILE WORLD

Continuous Chlorite Bleaching Is Now In Operation

Truly continuous bleaching, with the use of conventional two-stage ranges and Textone as the bleaching agent, appears to be a commercial fact in this country today.

R. L. Holbrook, speaking before AATCC's Northern Piedmont section at Roanoke, Va., told members the procedure. Here it is:

Prepare all-cotton goods by the conventional caustic saturation and J-box dwell. Then wash and sour the goods. The sour is important—you must remove all traces of alkali. Then wash out excess acid and go into the Textone saturator. Goods should be at pH 3 to 6, and the bleaching solution in the fiber should be about pH 4. Haul goods into the J-box and keep them at 212 F. except for top of column. Here cool goods hold down vapors.

Some slight modifications in saturators and J boxes will have to be made to insure complete saturation at the right pH and to hold down production of corrosive vapors.

Results? Up to 450 ypm. (two strands) production, no silicate problems, excellent dyeability, lower chemical costs, better tensile and tear strengths. This system is well suited to cotton and man-made fiber blends that don't respond well to chlorine or peroxide bleaching. Skip caustic preparation for cotton-Dacron, or cotton-nylon blends.

Modified Starches Give Crease-Resistant Finishes

Researchers at Miles Laboratories, Inc., have come up with new starch products that may have interest for wash-and-wear. Why? They give a crease-resistant finish.

Starting with periodate-oxidized starch, you can make the new mono- or di-urea oxystarches by reacting the oxystarch with urea in methyl alcohol and water. It's also possible to start with an oxidized starch prepared by an electrolytic procedure (U. S. Patent 2,713,553).

These oxidized starches cost less to prepare than the periodate oxystarches cost.

New Resin for Wash-and-Wear Doesn't Retain Chlorine

A resin that imparts excellent wash-and-wear properties but doesn't accelerate chlorine damage has been patented by Dow Chemical Co., Midland, Mich.

You make the resin by reacting urea with 1:3-diamino-2-propanol at 100 to 180 C. until sufficient ammonia splits off. End product: tetrahydro-5-hydroxy-2-(1H) - pyrimidone. Treat goods in a solution of 50 parts of pyrimidone, 88 parts 37% formaldehyde, 5.9 parts 2-amino-2-methyl-1-propanol hydrochloride and 419 parts water.

Dry at 212 F. and cure at 300 F. for 4½ minutes, and afterwash. Resin content should be about 8.6%. Crease angle recovery is 147 (AATCC) as compared to 86 degrees for untreated cloth. The fabric isn't damaged by subsequent laundering with chlorine bleaches any more than untreated material.

Additives Improve Polyester Fibers

You get better dyeability and higher softening temperatures in modified polyester fibers as described in British Patent 876,534 to Union Carbide Corp. Add in the melt from 3 to 17 sulfone moles derived from a dialkylene monosulfonyl diester such as dimethyl 6:6-sulfonyldicaproale, or dimethyl 6:6-sulfonyldivalerate.

You can dye without carriers with the new fibers. Softening temperature is 240 to 250 C.

Other textile qualities and spinnability are excellent.

Now—Continuous Acetate Dyeing with Wool Dyes

You can apply acid or premetalized dyes to acetone-soluble acetate fabrics by using a new continuous method. Here's how British Celanese does it:

Make the bath with the dye, 20% isopropyl alcohol, 12% formic acid, 8% sulfuric acid, plus a suitable wetting agent. Put the goods through the liquor at 30 C. and at a rate to give about 20 seconds immersion. Then squeeze out excess dye liquor and wash the fabric immediately in cold water. Follow with a soaping at 50 C.

Solvent-assisted continuous dyeing of acetates isn't new, but the use of premetalized dyes for the purpose is quite recent. A point of interest: Use several small immersion troughs with a short air run among them to cut down the amount of dye liquor necessary.

If the fabric is a blend of acetate and cellulosic fiber, the latter is left white. Wool will be stained, and nylon 6 or 6,6 will be strongly colored at about the same rate as the acetate fiber.

Wash-and-Wear News Highlights Dutch Textile Conference

Wash-and-wear finishes held the spotlight at the Textile Institute Conference in Scheveningen, Holland, in September. Here are some of the highlights of discussions by both U. S. and European scientists on latest methods in this field:

A soft, not tacky, polymer applied to a fiber affected considerably by wetting out (such as rayon) will improve its wet and dry crease resistance, Richard Steele, of Rohm & Haas, told members. In his discussion of the effect of surface deposits of aminoplasts and acrylic resins on wet and dry crease resistance of cotton and rayon, Steele said the effect of similar treatment on cotton is to improve wet but reduce dry crease resistance. Normally good crease resistance is considered to be a function of internal deposition of resin.

You get crease recovery in cotton by preventing slippage of the structural elements of the fiber, particularly lamellae and microfibrils, according to W. A. Reeves, U.S. Department of Agriculture. If cross-linking is done on wet swollen fiber, crease recovery is good only on wet fabric, he added. If the operation is done on dry fabric, both wet and dry crease resistance are improved.

Reeves said present crosslinkers rely largely on covalent-bond crosslinkers, although hydrogen-bond crosslinking is possible, and may warrant more attention.

Any pretreatment that increases water imbibition, such as mercerizing, phosphomethylation, or carboxymethylation, encourages hydrogen-bond cross-links. Acetylation reduces both wet and dry crease resistance recovery.

H. Borsten of the Vezelinstituut T. N. O., Delft, probed the effect of mercerization on fabric to be finished subsequently in wash-and-wear. His finding: Mercerizing should be done to leave the fiber (after mercerizing and resin finishing) with an extensibility of 3 to 5%, and a molecular orientation favorable to the highest elasticity of fiber, yarn, and fabric. For these effects, you need maximum swelling during mercerization, and small to moderate orientation. Fabric should wet out quickly.

Dr. E. Plotz, of Badische Anilin & Soda Fabrik, reported on the effect of caustic treatments on goods crosslinked with dimethylol dioxyethylene urea. His finding: If you steep treated goods in a 20% caustic soda solution at room temperature for 2 minutes you will lose considerable dry-crease recovery (not wet). At the same time, he added, the goods come back to nearly original strength and water retentivity. Soak the goods for 24 hours in a 20% caustic liquor and all before-finishing qualities of the fabric will be restored, except that wet crease resistance is retained. Why? Apparently wet and dry crease resistance are results of different mechanisms. Dry crease recovery is believed to come from fixing the crystalline and amorphous regions of the cotton molecule in a less mobile condition. The caustic treatment tends to recreate the original mobility. Wet crease resistance as a function of treating wet-swollen cotton with crosslinkers, like formaldehyde or 1:3-dichloro-2-oxypropane and caustic soda, is a different mechanism.

Dutch scientists Dr. C. van Bochove and Dr. M. Zwick, investigating the possibility of getting good dry crease resistance on Vinylon, find that long-chain aldehydes are preferable to formaldehyde, and that a more stereo-regular raw material—for instance polyvinyl chloroacetate instead of polyvinyl acetate—helps to produce a fiber with better dry crease resistance.

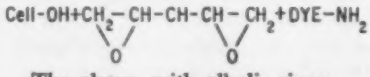
More accuracy in the estimation of dry crease recovery is behind development of apparatus and procedure by workers C. Bostwick, B. Behre, and M. Karrholm of the Swedish Institute for Textile Research. One accuracy-boosting procedure: A period of 20 hours is allowed for crease recovery of a rumpled sample before measuring.

Now—Make Reactive Dyes on Fabric

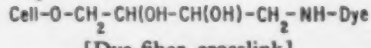
The goal of producing fast colors and a wash-and-wear finish on cotton in one run is coming a little closer. Ciba's Basle (Switzerland) Laboratories have come up with new ideas to get reactive-dye effects from many common dyes by adding chemicals in the dyebath. The key: diepoxides, which figure strongly in the newer wash-and-wear finishes.

Examples include the treatment of a cotton fabric with a dye that has a free reactive amino (NH_2) group in an alkaline liquor. The liquor should also include a substance to combine with both dye and fiber on subsequent drying and heating to 130 to 140 C. Crosslinkers of this type are 2:3 dibromobutane-diol-(1:4) or butadiene dioxide. But you can also use diepoxides like the diglycidyl ethers. These products are water soluble. You can also use emulsifiable chemicals such as 2:2-di (para-hydroxyphenol) - propane diglycidyl ether.

Here's what happens with butadiene dioxide, dye, and alkali:



The above, with alkali, gives:



[Dye-fiber crosslink]

If you use 2:3-dibromobutane-diol-(1:4) to crosslink the dye, this product decomposes to release hydrobromic acid, butadiene dioxide.

Some dyes that aren't substantive to cotton are very useful in this new concept of dyeing. Lack of substantivity aids in maintaining shades in continuous runs.

As long as there is a reactive amino group in the dye and a solubilizing sulfonic or carboxylic group, you can choose from a wide range of present dyes to get the reactive dye effect. Examples include the very fast copper phthalocyanine blues, anthraquinone dyes, and some premetalized dyes.

Reactive Dyes O.K. on Wool

Take another look at some of the reactive acid dyes you have abandoned for wool dyeing. Today you can use them to produce level, solid shades of excellent washfastness if the dyebath contains a mixture of cationic and nonionic dispersing agents plus an acid or acid salt and an amine, an alcohol or a phenol. British Patent 869,150.

Without special treatment these reactive dyes which contain the reactive 1:3:5 triazine group and are mainly of the water-soluble monoazo type, give skittery or poorly covered dyeings.

Suitable cationic materials to add to the dyebath include cetyl pyridinium bromide, cetyl trimethyl ammonium bromide, and diethylphenyl benzyl ammonium chloride. Nonionic agents include condensates of ethylene oxide with amines, fatty alcohols such as cetyl alcohols, and alkylphenols such as octylcresol.

Use up to 5% of these agents (based on weight of wool). Other additives: n-butyl alcohol, benzyl alcohol, cyclohexanol and analine. Here's a typical printing paste:

40 parts reactive dye.
100 parts urea.
Sodium alignate.
350 parts solution (5%).
20 parts ammonium dihydrogen phosphate.
40 parts benzyl alcohol.
15 parts cetyl alcohol—ethylene oxide concentrate.
10 parts sodium meta-nitrobenzine sulphonate.
5 parts cetyl trimethyl ammonium bromide.
420 parts water.

Apply by roller printing. Dry goods at 60 C., then steam 15 minutes at atmospheric pressure.

You can set up a padding process with a liquor based on:

10 parts reactive dye.
40 parts benzyl alcohol.
5 parts cetyl trimethyl ammonium bromide.
10 parts cetyl alcohol-ethylene oxide condensate.
10 parts acetic acid.
925 parts water.

Pad on to 100% pickup and steam in saturated steam for 1 minute. Rinse and dry.

Silicone Vapor Process Improves Wool Two Ways

Wool develops good water repellency and resistance to shrinking with a new silicone vapor process. Organo-silicon halides in an aerosol dispersion do the trick.

You pass the fabric through a drying chamber, then into a chamber in which the aerosol dispersion is continuously introduced. Base at least 50% of the vapor on a mixture of methyl trichlorosilane and dimethyl dichlorosilane. Use about 2 parts of the silane mixture for each part of wool.

Allow reaction time of 1 to 5 minutes. Then put the fabric through a neutralizing liquor and dry it. (Patent by E. Robbart.)

Formaldehyde Now Safe For Wash-and-Wear?

The U. S. Department of Agriculture now says maybe textile finishers can use formaldehyde as a wash-wear finish. Fabrics with the new finish will not yellow or discolor if washed with chlorine bleach.

The key? Length of time fabrics remain in the chemical solution. In this process you keep the fabric wet with the solution for 30 minutes (vs. the usual pad-dry-cure continuous process). The formaldehyde is mixed with hydrochloric acid, acetic acid, or calcium chloride.

The solution causes the cotton fiber to swell. Hydrochloric acid, acetic acid, and calcium chloride control the degree of swelling. Formaldehyde then enters the slightly swollen fibers. Catalyzed by the acid element, it reacts with the cellulose to bind the molecules firmly together. This binding causes the fiber to dry flat. Result: wash-wear characteristics.

In the new process, strength losses of fabrics can be kept low. Chemists responsible for this treatment are Leon Chance, Rita M. Perkins, and Wilson A. Reeves.

Did You Know . . .

. . . new chemicals called fluorocarbon silicones provide oil-stain repellency resistant to laundering? The combination of silicones for good water repellency with an oil-stain repellent seems to work synergistically—silicone makes the fiber hydrophobic and thus resistant to detergents. Midland Silicones Ltd., who developed the compounds, is said to have the general formula, $(CF_3)_2$ $CHCH_2$ HSiO.

■

. . . cationic agents help to level dyeings of acrylic fibers by competing with the dye for dye sites? The cationic material cuts back the rate of strike. This is more effective than prolonged treatment with cationic dyes, often used on these fabrics. Poor migration of the cationic dyes is responsible for the ineffectiveness of leveling procedures that depend on time and high temperatures.

■

. . . lightfastness of dyeings is better when dyes are in aggregate form rather than in a molecularly dispersed state? If you've used urea in finishing, colorfastness of the dyeing may suffer because urea is a dye dispersant.

■

. . . saturated steam is better all around than superheated steam for setting nylon fabrics? Saturated steam increases rate of dyeing, doesn't discolor the fabric or degrade it in any other way. It also has less effect on dye equilibrium take-up than superheated steam. The latter slows down the rate of dyeing and the dye-equilibrium take-up.

■

. . . over 2-billion yards of cotton fabrics were given resin finishes in 1960? That's 62% of total production of easy-care fabrics and represents an increase in 5 years of over 1½-billions of yards of cotton finished in this way.

What's New in Dyes and Chemicals

Brighteners

Blancophor AM-80 . . . produces a blue-white fluorescent hue on acrylic fibers under daylight or fluorescent light. You can apply it in standard dyeings or put the brightener directly into the fibers (solution dyed).

Blancophor MO-89 . . . is a new fluorescent brightener for polyolefin fibers and films. You can dye polypropylene fiber with the brightener or put it in with the melt prior to extrusion. It has outstanding light and washfastness. General Dyestuff Co. **(Write D-1 on Reader Service Card)**

Rotproof Finish

Arigal C . . . eliminates deterioration in fabrics exposed to earth under moist conditions, or other extremes of humidity, rain, wind, and sunlight.

The product is nonleaching. It's applied by continuous processing methods. Chemical fixation is rapid and no afterwashing is necessary. The treatment does not affect fabric strength, and the original hand is retained. Ciba Company, Inc. **(Write D-2 on Reader Service Card)**

Direct Dye

Lumicrease Dark Brown 3 LB Pat. . . . is suitable as the main element for brown shades on cotton, rayon, linen, sisal, jute, or hemp. The color has excellent lightfastness and is unaffected by resin finishing. It has good working properties and its dyeings have excellent fastness to spotting and washing when aftertreated with Cuprofix 52 or Sandofix WE. Sandoz, Inc. **(Write D-3 on Reader Service Card)**

Foam Adhesive

Tylac Latex CD-1-80-1 . . . works well with polyether or polyester foams as the adhesive agent in laminating. Bond is still good after 10 home launderings or 24-hr. agitation in perchloroethylene.

The laminates produced with the adhesive have good hand, good drape, and good color stability. You can apply them by knife, roller coating, or spray. International Latex Corp., Chemical Div. **(Write D-4 on Reader Service Card)**

Backing Compound

Lotol L-4634-D . . . is a self-curing latex that requires about half the amount of thickeners necessary in older formulations. The backing material has good resistance to light and aging as well as good low-temperature qualities and high filler tolerance. The latex has excellent tuft and pile lock, resilience, hand, and resistance to deformation. Naugatuck Chemical Div., United States Rubber Co. **(Write D-5 on Reader Service Card)**

Reactive Dye

Cibacron Brilliant Red BD . . . is especially suited for printing cellulosic fibers. The dye produces brilliant red shades or, in combination with Cibacron yellows, very bright scarlets.

It has good solubility, lightfastness, and build-up properties.

Print pastes show very good stability. The unfixed dye washes off readily without staining whites. You can fix prints by conventional means. The color is also useful in dyeing. Ciba Co., Inc. **(Write D-6 on Reader Service Card.)**

Acid Dyes

Kiton Fast Blue FGL . . . dyes wool and nylon to a greenish-blue. The dye builds up well and levels well. It has good solubility and its shades have good lightfastness on woolens. It is recommended for dyeing Banlon to minimize barré effects and to leave polyester fibers white. You can use the color with Neolan dyes to brighten shades. Other uses: carpet yarns, dress goods, and house furnishings.

Kiton Fast Blue SRL . . . produces blue shades of a reddish cast on wool and nylon. The dye has excellent build-up properties and exhibits very good lightfastness and good wetfastness on both wool yarn and piece goods. It is very soluble and is level dyeing.

The color is recommended for dress goods, furnishings, upholstery fabrics, and wool or fur hats. Ciba Co., Inc. **(Write D-7 on Reader Service Card)**

Water Repellent

Argus DWR . . . resists both laundering and drycleaning. The product is applicable to cellulosic and man-made fibers. It is compatible with most resin finishes and with fluorocarbon oil-repellent finishes as well.

Its resistance to drycleaning is said to be equal to or better than that of silicone water repellents. And resistance to washing is claimed to equal that of pyrimidine- or stearamide-based repellents. Argus Chemical Corp. **(Write D-8 on Reader Service Card)**

Antifoam Agent

Ex-Foam 333 . . . contains no silicones, does not separate, is almost water white. The product has a high bulking value and low specific gravity. Troy Chemical Co. **(Write D-9 on Reader Service Card)**

Anionic Softener

Polasan A . . . has high resistance to yellowing and scorching, and is readily soluble in cold water. The product is suggested for any softening or lubricating purpose. In addition, it provides a nondurable antistatic effect on man-made fibers. It will not retain chlorine and has good aging qualities. Onyx Chemical Co. **(Write D-10 on Reader Service Card)**

DU PONT TECHNICAL CONSULTANTS COVER THE CONTINENT AS TEXTILE DYEING TROUBLE-SHOOTERS

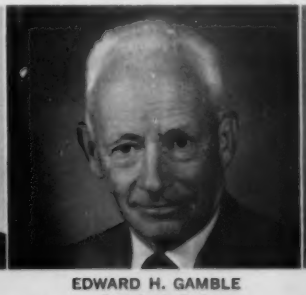
What is a technical consultant for the Du Pont Dyes and Chemicals Division? He's an encyclopedia of practical mill experience . . . a dye catalog . . . an emergency supervisor . . . a creative thinker who can map out entire plants—a shirt-sleeve worker . . . and a short-order answering service, all rolled up in one highly mobile and affable individual.

Du Pont has a number of highly specialized men, all with strong backgrounds in continuous and batch color techniques. Piling up as many as 50,000 travel miles a year, these experts help solve all kinds of problems for textile mills. They provide an objective "outside" view and maintain the highest professional standards with regard to confidential information.

Rather than print pages of praise that these technical consultants have earned, we would prefer you discovered their caliber for yourself, if you already have not. Working from strategic locations, they're standing by—literally prepacked—to take off for your mill whenever your dyes and chemicals salesmen feel they're needed. Got a dyeing problem? Call your Du Pont salesman *now*.

Here, two Du Pont technical consultants work right in a customer mill, providing highly expert advice on specific dyeing problems.

PAUL L. SPEAKMAN
Philadelphia, Pa.



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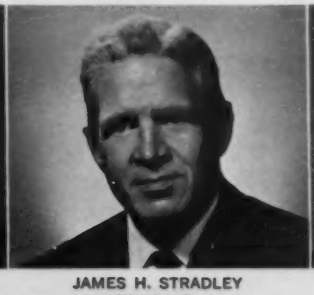

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Atlanta, Ga.

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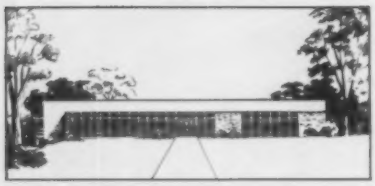
Charlotte, N. C.

news from Du Pont

NEW "PONTAMINE"® WHITE SP SOLUTION ADDED TO DU PONT BRIGHTENER LINE

With the announcement of "Pontamine" White SP Solution, Du Pont now offers a wide range of fluorescent brighteners for the textile industry. "Pontamine" White SP Solution is a good, economical white recommended for continuous padding operations. One outstanding feature is its compatibility with zinc nitrate—often used as a catalyst for resins.

This product is a good partner to "Pontamine" White BT—a substantive fluorescent brightener for use in batch operations. The latter product offers good buildup without yellowing and stability with peroxide bleach. When exceptional chlorine fastness is needed, Du Pont offers "Pontamine" White 2GT. Other fluorescent brighteners are available for specific application problems. Du Pont, of course, has the laboratory facilities and technical skills to back up these products and is ready to advise textile mills on their white problems.



NEW DISTRICT OFFICE SERVES NEW YORK AREA

The Du Pont Dyes and Chemicals Division has opened offices in Clifton, New Jersey, to serve the New York area better. Sales, laboratory and warehousing facilities have been consolidated to speed service to customers. Come visit us at our new address: Brighton Road Industrial Park, 50 Page Road, Clifton, New Jersey. Phone PRescott 3-5600.

Announcing: A Versatile Basic Yellow with Several Advantages

One of the most interesting recent additions to the Du Pont color line is "Sevron"* Yellow 2R, a basic dye which has good all-around properties on "Orlon"* type 42 acrylic fiber and also is suitable for use on "Dacron"* type 64 polyester fiber.

The new color produces a greener shade than "Sevron" Yellow 3RL, has good fastness, solubility, and hydrolytic stability over a pH range of 3.0 to 8.0. In addition, it builds up well, exhibits a rapid dyeing rate (T/2—10 min.) with subsequent good exhaust.

It can be applied over the entire shade range and is especially suited to the production of deep shades of brown, navy and black because of its good exhaustion properties.

In addition, "Sevron" Yellow 2R shows good buildup and improved acid pH stability on "Acrilan®" 16 acrylic staple and is recommended for use on "Acrilan" 1656 by standard procedures for this fiber. It also is of value on "Creslan®" acrylic staple, "Verel®" acrylic fiber, and new "Orlon" type 36 carpet yarn.

Have you a multi-fiber dyeing problem? "Sevron" Yellow 2R could be the answer. Ask your Du Pont salesman for more information.

news from Du Pont

DU PONT OFFERS MORE THAN 70 SURFACE ACTIVE AGENTS

There's a Du Pont surface active agent that can help you in problems entailing wetting, detergency, dispersing, emulsifying, foaming, penetrating, softening, leveling, lubricating, etc.

Du Pont has a background of over thirty years' experience in surface active agents and their applications. Presently we market more than seventy different products representing all ionic types: anionic, nonionic, cationic and amphoteric.

Among the *anionic* agents we offer: fatty alcohol sulfates varying in chain length from C^8-C^{16} offered as sodium salts and some amine or alkylol amine salts; fatty alcohol phosphates which offer interesting anti-static and lubricating properties; hydrocarbon sulfonates which comprise wetting and penetrating agents, conventional detergents, as well as plasticizing and softening agents; and alkyl aromatic sulfonates which are used extensively in wet processing and cleaning operations.

Several *cationic* agents provide dye leveling and lubricating properties in addition to anti-static and softening properties.

Our *nonionic* agents have outstanding detergent properties. And since they are compatible with both anionic and cationic materials, they often provide valuable stabilizers for the prevention of coagulation and flocculation.

Our *amphoteric* products are uniquely versatile in acting anionic in alkaline solution and cationic in acid solution. They have exhibited excellent retarding, leveling and penetrating action in a great number of dye applications and are widely compatible with other chemicals.

*Registered trademarks of E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware

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DYES AND CHEMICALS

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Dyes and Chemicals Division
Wilmington 98, Delaware

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At AATCC's 40th Convention

Chemists See Progress . . .

. . . everywhere from the business outlook to recent research in chemical treatment of textiles. Here's latest news on resins for wash-and-wear finishes, wool research, handling polyester blends, cutting waste-water treatment costs, and other problems and processes.

NEARLY 1,200 textile chemists shuttled into the 40th annual meeting of the American Association of Textile Chemists & Colorists (AATCC) at Buffalo early in October. One thing sifted through all the speeches and exhibits. That one thing was progress. It was evident in the wide range and scope of subject matter alone. (You'll find samples of the top papers below—boiled down, digested, and capsuled.)

OUTLOOK GETS BRIGHTER

Aside from reportedly less-than-rosy business conditions in New England, most chemists at Buffalo exuded an air of quiet confidence on the business picture for the remainder of this year—and for the first quarter of next year.

Some had the usual reservations about profits. But processors and suppliers alike seemed genuinely pleased with the outlook for the next 6 months—despite some uneasiness about the Berlin situation.

PRODUCT INTEREST KEEN

Members showed considerable interest in new machinery—particularly some new pressure becks and electronic color-matching devices.

Burlington Engineering Sales Co. pressure becks created a stir as the newest entrants in the field of dyeing machines. The Burlington machines are now available in two models that can operate at 218 and 250 F. respectively. The higher dyeing temperatures speed processing polyamide and polyester fibers. Other advantages: better use of steam, water, and chemicals and containment of vapors and fumes.

In another exhibit at the meeting, Quartermaster Research & Engineering displayed a Quarpel-treated fabric that illustrates one of the greatest advances yet in producing durable water repellents.

Two other exhibits pointed up the trend toward more electronic color scouring and evaluating devices for color matching. Both Davidson & Hemmendinger (Easton, Pa.) and Hunter Research Associates (McLean, Va.) showed equipment that reduces the chance of human error in color matching.

Newest in supplies: an optical brightener developed by General Dyestuff Co. The product, now available in pilot-plant quantities, is especially effective on polyolefin fibers. You can apply the brightener in the melt or as part of a dyeing process.

You can get a fair sample of the scope of recent research in chemical treatment of textiles and allied subjects from the following condensations of major technical papers presented at the meeting. The Niagara Frontier section was host to the meeting. Cooperating was the Canadian Association of Textile Colourists & Chemists.

NEW WAY TO CUT WASTE WATER COSTS

Plants plagued with stream-pollution control problems need not invest in expensive multistage disposal plants.

Prolonged bio-aeration is the new key to low-cost disposal. For this, adequate lagoons with or without artificially induced aeration are successful. And they operate at one-sixth the cost of conventional trickle filter-activated sludge disposal systems. Biological oxygen demand (BOD) removal of 90% is common in the bio-aeration process. What's more, using the process on existing trickle-filter plants increases efficiency 200 to 300%.

You don't have to substitute materials of low BOD demand for starches in sizing formulas in the

new system. It will reduce BOD 95% in combination starch-dyehouse waste effluents. *R. Hobart Souther, Research Consultant, Guilford College, Greensboro, N. C.*

NEW WASH-AND-WEAR FINISH LOOKS GOOD

A finishing agent based on the reaction of two moles of formaldehyde with one mole of a monocarbamate (typically ethyl carbamate) shows considerable promise.

Outstanding qualities: resistance to chlorine damage and durability to breakdown from the souring treatments common to commercial laundry practices.

The reaction product is believed to be ethyl N, N-dimethylolcarbamate. The durability to laundering of finishes based on the product is somewhat better than nitrogenous finishes now in use. Crease-recovery properties are good.

You can make the finishing agent by reacting two moles of formaldehyde with one mole of ethyl carbamate and sufficient water to make a 30% solution at pH 8 to 8.5. Let the solution stand overnight at room temperature, then neutralize it and dilute it for use on your goods.

Use standard pad-dry-cure procedures to apply the solution. Treating solutions should contain at least 10% of the ethyl N, N-dimethylolcarbamate. Catalysts used in the tests were magnesium chloride hexahydrate, zinc chloride hexahydrate, and Monsanto's catalyst AC. The magnesium chloride catalyst had less effect on break and tear strengths than the zinc chloride. The organic amine produced results similar to the magnesium chloride. A good average curing temperature: 160 C.

Modifications of the finish with emulsified polyethylene and excess formaldehyde further improve crease recovery and other wash-and-wear properties. *Richard L. Arceneaux, J. G. Frick Jr., J. David Reid, and Gloria Gautreaux, Southern Regional Research Laboratories, New Orleans.*

STYRENE GRAFTS IMPROVE NYLON WEATHERING

Radiation-induced grafting of styrene on nylon produces valuable increases in weight, tensile strength, water resistance, and other properties important for outdoor uses.

Basic procedure: Expose nylon fabrics to radiation from Cobalt 60 in an AECL Gammacell 220 at various dose levels and under different conditions of saturation with styrene monomer. In preradiation trials, samples were irradiated before being saturated with styrene monomer in an alcohol-water solution. Simultaneous radiation treatments were made on samples already wetted with the styrene monomer solution.

Results of many experiments in varying dosage, styrene concentration, aging of the treated samples, and make-up of the styrene solution are as follows:

- Both simultaneous and preradiation methods give weight increases and improved tensile strength. You might choose either one of the methods, according to the economics of specific operations. Base an effective treating solution on 20% styrene monomer, 72% ethyl alcohol, and 8% water.
- The optimum dosage of gamma radiation is 2×10^6 rads, which produce a true-graft weight increase of 62.2% and an appreciable gain in breaking strength.
- Aging of the treated samples for 1½ to 4½ hours before extraction with benzene to remove free styrene improves the weight increase due to true graft. Longer aging brings no extra benefits.
- Resistance to water spray of grafted nylon with 29.2% weight increase is 100%—comparable to silicone-treated nylon. But grafted nylon is more resistant to laundering and drycleaning.
- Elongation strength of grafted nylon is double an untreated fabric.
- Resistance to water penetration by the static head test (ASTM 4GP-2 schedule, method 26.3) is increased linearly as weight increases due to grafting. You can expect resistance to 106 centimeters of water pressure at 57.2% weight increase. Untreated nylon has no resistance in this test. Resistance after flexing is comparable to standard Army ducks if weight increase is 57%.
- Weathering tests in the Weather-Ometer will not reduce the water-spray resistance of grafted nylon that has been sufficiently grafted. There is a loss in tensile strength but no more than in untreated samples. *Sharda Dasgupta, J. T. Slobodian, and D. L. Rowat, Atomic Energy of Canada Ltd., Ottawa.*

BETTER WHITES AT LITTLE EXTRA COST

You can get better whites at little extra cost and with no significant effect on the wash-and-wear properties of cottons. The key: fluorescent brighteners.

You should introduce the whitener in the pad bath with the resin. You'll get the most pronounced brightening effects from stilbene derivatives. Application after crosslinking is less effective because of lowered absorptivity of the goods. You can pretreat the goods effectively, but this is less economical than the one-shot application.

Laundering with detergents free of optical whiteners causes some loss of fluorescence. There is some tendency to pick up more chlorine when you use the dimethylolethylene urea resin plus the whitener. But you can overcome this difficulty with triazone-type resins. *Robert M. Reinhardt, Terrence W. Fenner, and J. David Reid, Southern Regional Research Laboratory; and Margaret S. Furry and Mary Walsh, Clothing & Housing Research Div.*

. . . Turn the page

CHEMISTS SEE PROGRESS . . . *Begins on page 76*

OVERDRYING BRINGS PROBLEMS LATER

Cotton goods that are overdried in initial stages of processing later show definite defects in dyeing and finishing.

This finding is borne out in a paper from the Rhode Island Section. The paper won first prize in the Intersectional Technical Paper Competition.

Experiments show that you get best dyeing results when the cotton fabric has never been dried down to less than normal regain at any point prior to dyeing.

Can drying is the worst culprit in this respect. Modern drying ranges based on cans are set up for high temperatures and high speed. Trials on goods dried at 230, 250, and 293 F. prove that deepest shades are produced on goods dried at 230 F. Not only are dyeings lighter on goods dried at 293 F, but they are also mottled. High temperatures also accentuate stop marks.

Laboratory trials reveal that samples with an excess of moisture (200%) or normal amounts (70%) show similar light-shade tendencies if dried at 300 F.

Dry fabrics with normal amounts of regain moisture can be dried on the iron without showing a dyeing difference.

Samples dried at low temperatures to normal regain, then redried on an iron at 300 F. to remove residual moisture, have better crease resistance if resin finished than samples treated at normal moisture.

Mercerizing after overdrying will reduce the effect of overdrying. Simple wetting out and redrying do not. *Herman B. Goldstein, Warwick Chemical Div., Sun Chemical Corp.*

WOOL RESEARCH STRENGTHENS FIBERS

Possibilities today in wool-finishing technology: mothproofing at ¼¢ per pound wth Dieldrin, shrinkproofing that doesn't destroy desirable fiber qualities, and wash-and-wear finishing.

So far, acceptance of these treatments is better in Australia, where they were developed, than in the United States. But they are beginning to catch on here.

The most satisfactory process to date: shrinkproofing by the treatment of wool with potassium permanganate in a saturated solution of common salt, followed by a clearing-up treatment in a sodium bisulfite bath.

This process only slightly accelerates the dyeing rate and presents no problems in level dyeing. Test blankets laundered 300 times at the boil in acidic detergent show negligible shrinkage.

You can flat set woolens to give wash-and-wear effects by first shrinking them with the potassium permanganate process, then pressing them while they still contain sodium bisulfite and about 50% water. Use a semidecater to press the goods. You can get improved flatness and freedom from cockling by boiling the goods for 1 to 2 minutes in a crab with sodium bisulfite. *J. R. McPhee, Australian Commonwealth Scientific & Industrial Research Organization.*

HOW TO UTILIZE CAUSTIC ECONOMICALLY

You should take another look at recovering dilute caustic solutions.

The savings you get in a year or two could well pay for the machinery needed. What's more, you could ease the problem of meeting government demands to clean up streams.

How can you do it? Here are some pointers:

- Efficient washing at the mercerizers.
- Utilization of flue gases to neutralize caustic wastes from boiloffs and kiers.
- Dialysis of impure recovered caustic to fit it for reuse. *W. R. Steele, Solvay Process Div., Allied Chemical Corp.*

NOW—A NEW WAY TO STABILIZE WOOL

Research chemists have come up with a practical way to apply nylon-like resins to wool and worsted fabrics for stabilization.

To stabilize woolens and worsteds, pad the goods in a solution of hexamethylene diamine. Then 30 seconds later pad the goods in a solution of sebacoyl chloride in a solvent. For woolen fabrics, 0.5 to 1% of the resultant polyamide must be deposited on the fabric. Worsteds require at least 2% add-on. To come up with practical processing methods, chemists have explored variations in temperature, pad pressures, and pickup.

The treatment generally improves fabric properties. Most effective treatment is on piece goods. You can treat garments but you'll need to extract the goods centrifugally to avoid permanent creases that develop from padding treatments. You can treat wool top satisfactorily too. But the results are inferior to those produced on fabric. *W. Fong, R. E. Whitfield, L. A. Miller, and A. H. Brown, Western Regional Research Laboratory, Albany, Calif.*

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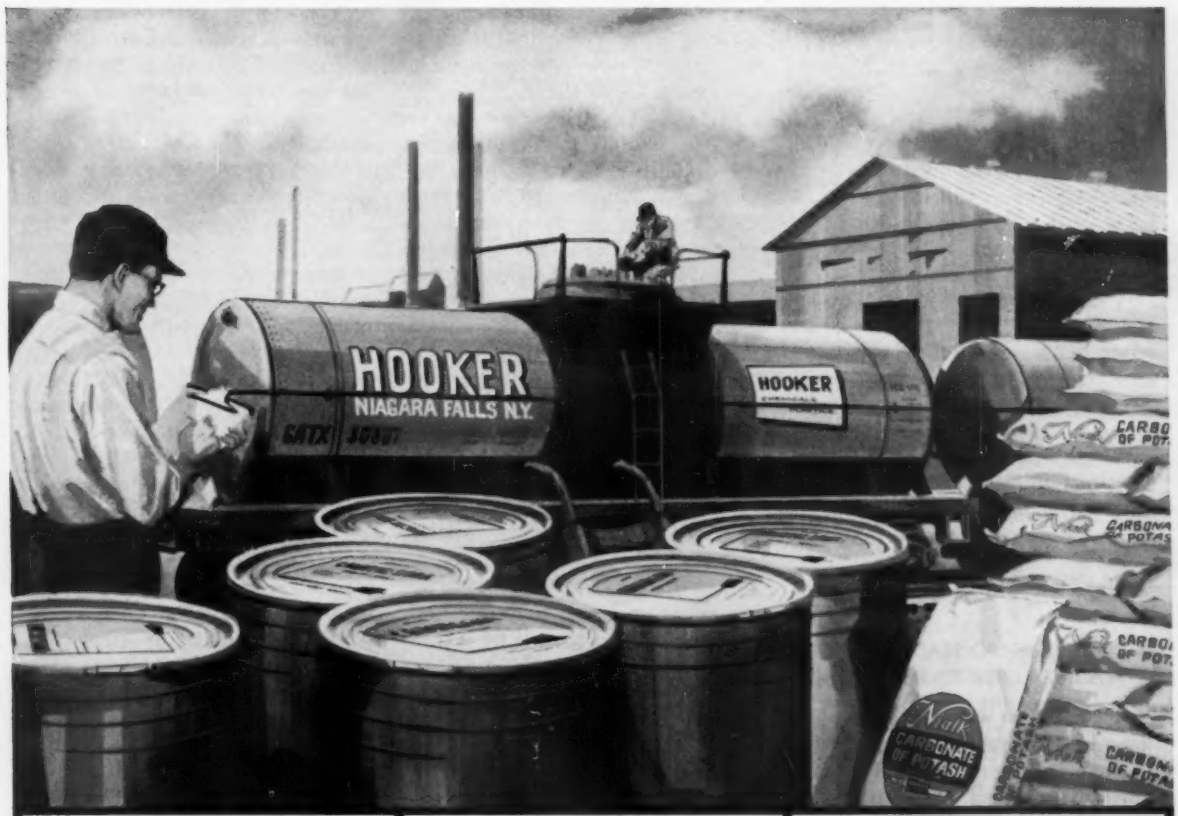

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CHEMISTS SEE PROGRESS . . . *Begins on page 76*

UV ABSORBERS MEAN BETTER LIGHTFASTNESS

More work on ultraviolet (UV) absorbers has improved lightfastness of carrier dyeings on both nylon & Dacron.

Here are some of the latest research results:

Biphenyl is preferred as a carrier over several others when it is used with Genacryl or Celliton dyes on Dacron. It doesn't appreciably increase lightfastness on nylon dyeings with the same dyes.

UV absorbers with strong absorption in the 350-mu to 400-mu region are more effective in stabilizing colorings than materials with strong UV absorption only in the 300-mu to 350-mu range.

In the presence of UV absorbers, certain wool colors that penetrate well on spun nylon are more lightfast than the same colors on filament nylon fabrics. The washfastness of UV absorbers on Dacron 64 is superior to that obtained on nylon. *Dr. A. F. Strobel, Antara Chemicals Div., General Aniline & Film Corp.*

NEW WAYS TO HANDLE POLYESTER BLENDS

Research on ways to handle polyester blends is rapidly moving ahead.

Here are several hints on the best ways to get superior results, boiled down from a critical examination of finishing processes and over 200 dyes used in dyeing Fortrel, Dacron 54, and Terylene—and blends of these fibers with cotton and wool.

The proper dye is extremely important in reserving white areas for Fortrel-cotton blends, particularly with disperse blues. Avoid dyes that sublime. Chemists have come up with 18 dyes that work well under pressure dyeing conditions.

Generally, pressure dyeing without carriers is preferable. Pressure scouring of Fortrel-cotton blends will give you a better balanced yarn and is especially preferable if you're going to bleach the yarn white.

Vat or sulfur dyes for the cotton component are recommended for fastness. An added extra: The alkaline vat-reducing baths clear up any staining of the Fortrel. Also useful: naphthols or fiber-reactive dyes for producing bright shades.

You can use disperse dyes for wool-Fortrel blends with little staining of the wool. The staining mechanism is complicated, and again dye selection is most important. Pick dyes that (1) have low aggregation properties that exhaust well on polyesters in a short dyeing time, and (2) have low intrinsic saturation values for wool. Dyebath aids can also be useful in reducing wool staining. Tamol-N is satisfactory.

Pill resistance is a result of proper finishing treatments and fabric design. To get soft, woolly hands characteristic of all-wool fabrics, you must bring the wool to the surface. This procedure will reduce pilling, particularly when you use low-pilling modified polyester fiber in the blend. Short-staple wool combined with long-staple polyester fiber works best. Open constructions are better than closely woven ones.

Necessary steps: thorough brushing, singeing, and/or shearing before fulling.

To get a silk-type hand on Fortrel-cotton blends, use a caustic boiloff. Treat the goods at 185 to 190 F. for 30 minutes in a 1 to 2.5% caustic soda solution. Quaternary ammonium compounds aid the process. Singe the fabrics before causticizing in most cases.

Final finishing includes heat setting, calendering, and the application of a silicone finish—all necessary steps to get a silky hand on polyester blends. *Ralph E. Lacy, V. S. Salvin, and W. A. Schoeneberg, Celanese Fibers Co. Div., Celanese Corp. of America.*

HOW TO MEASURE WHITENERS ACCURATELY

You can measure whiteness accurately if you carefully calibrate instruments beforehand and handle the specimens carefully.

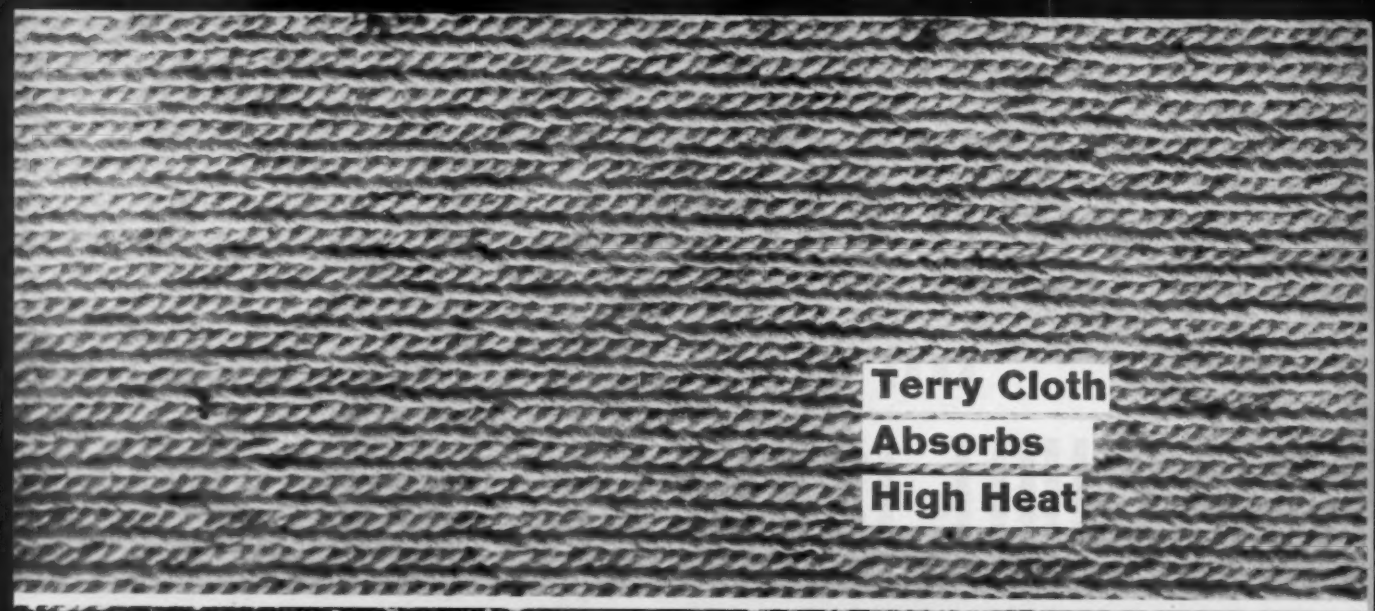
That's the conclusion of the Washington (D. C.) section paper, second-prize winner in the Intersectional Technical Paper Competition.

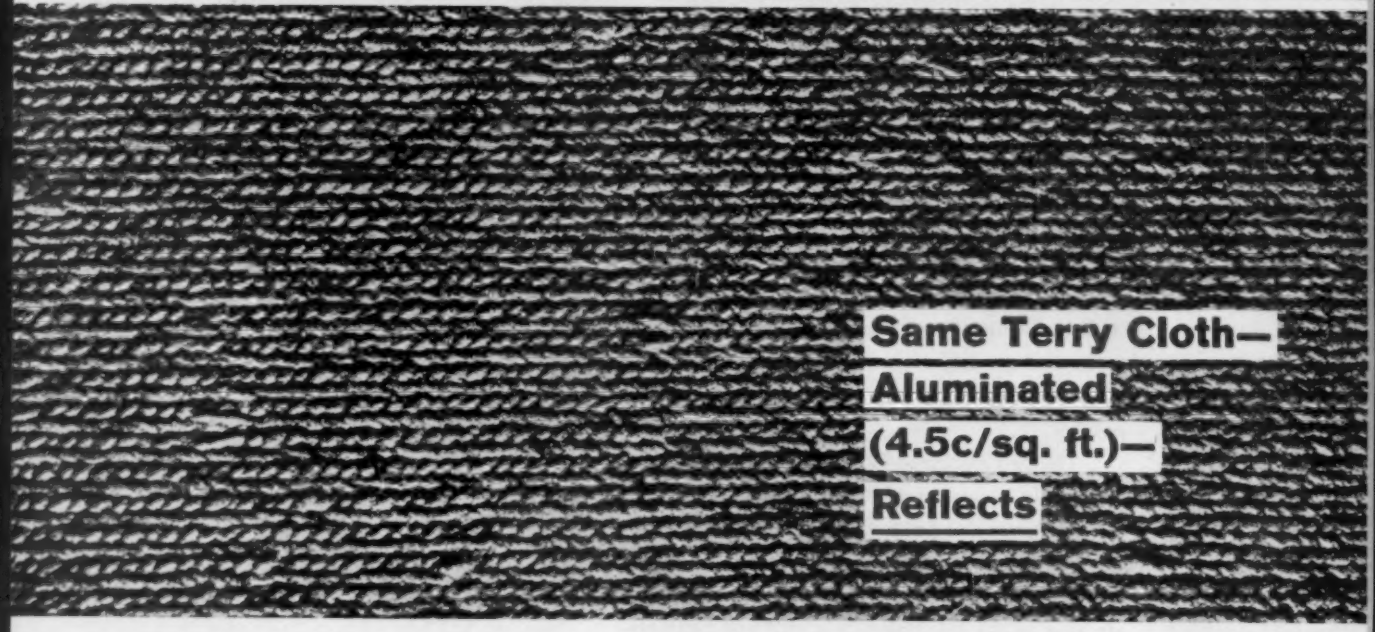
Most disparities among instruments can be minimized with the use of some standard panels now under development to calibrate the instruments. For the tests reported to AATCC, ceramic standards were used to identify the spectral, geometric, and photometric differences between the six types of instruments used in eight different laboratories.

Best ways for you to handle specimens being examined include checking them against standards of similar reflectance with a cover glass, and exposing several thicknesses of material at repeatable compression. It's also a good idea to orient specimens warpwise and fillingwise to provide typical color evaluation. For some fabrics, orientation is most important because of the effect of construction on end use.

When handling pile fabrics or other bulky specimens, break up pile direction and compress the sample under a cover glass with a reproducible pressure.

Instruments you can use in the tests included Gardner and Hunter color-difference meters, the Hunter Multireflectometer, Coloreye, Colormaster, the Gardner Photometric unit, and the Hunterlab D40 Reflectometer. *Richard S. Hunter, Hunter Associates Laboratory, McLean, Va.*





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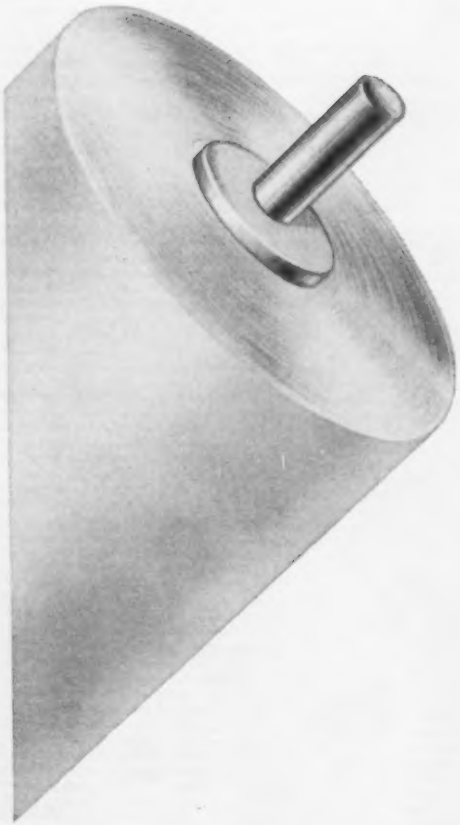
COLD FACTS
on a
HOT ISSUE



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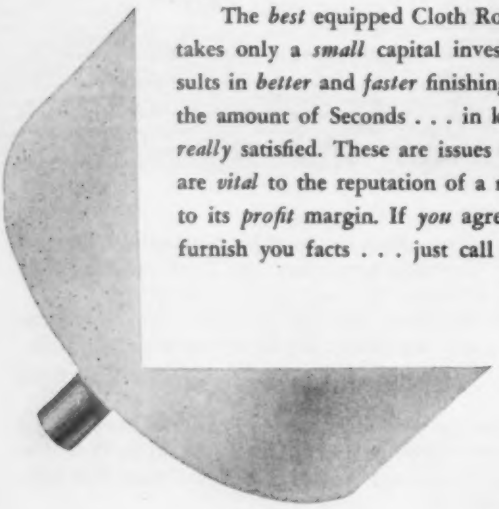

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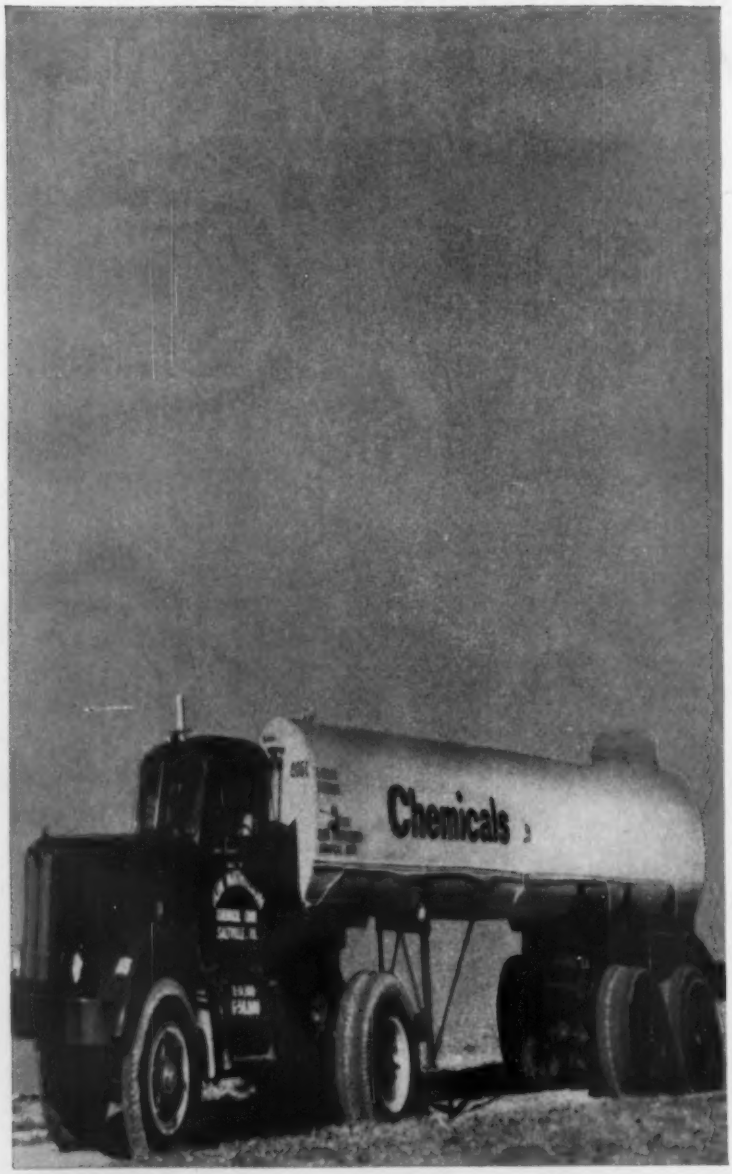

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AMPLE WORKING space and good layout mark this view of the new dyehouse. Glass pipe delivers dyes and chemicals to tanks.

CHEMICAL TREATMENT & FINISHING

The Butte Story: Part 2 (Part 1 on page 55)

Package Dyer's Dream

BUTTE Knitting Mill Division's new dyehouse is a dyer's dream. It's light, airy, and well laid out. And it typifies the latest techniques and tools used in package dyeing. It's roomy enough so the amount of equipment now used can eventually be doubled. In fact, openings for additional dyeing machines have already been built into the concrete floor, ready for the day when production demands more expansion. And it's just part of the Jonathan Logan division's whole new plant at Spartanburg, S. C.—first completely integrated double-knitting mill in the country. (See Part 1 of the Butte Story, page 55.)

Right now, two 500-lb. Gaston County machines turn out 30,000 pounds of worsted yarn a week. Bulk of this production is 30s singles spun on the premises. Butte buys top from South Carolina and other top makers. Top is made from 70s Australian wools of highest quality.

There's no guesswork in Butte's dyeing procedures. The firm has a well equipped laboratory with a one-package dyeing machine that helps determine all production formulas.

David M. Willis, head dyer, says, "We can correlate the sample machine formulas with a full load of 500 or 1,000 pounds of yarn with about 99% accuracy."

For the outerwear that makes up Butte's production, Willis uses acid milling and top chrome dyes to get the necessary fastness.

The lab's duties extend well beyond the formulation of dyes. Technicians test every batch of yarn for lightfastness, crocking, perspiration, and drycleaning. And they keep complete records of each dye batch. "That way," says Willis, "We can go back to our records and check every factor that went into dyeing any batch."

HOW BUTTE DYES

The dyeing process starts with a thorough scour with soap and soda ash to remove wool oils and clean up the yarn. The controller that operates the machine is set to determine time and temperature so each batch has the same treatment.

After a rinse, Butte makes up the bath with dyestuff and assistants. It boosts acid milling dyes to exhaustion with acetic acid. Dyes that will be top-chromed also require acetic acid. Formulations vary according to the dye and depth of shade. End-use fastness requirements dictate the choice of assistants and exhausting agents.

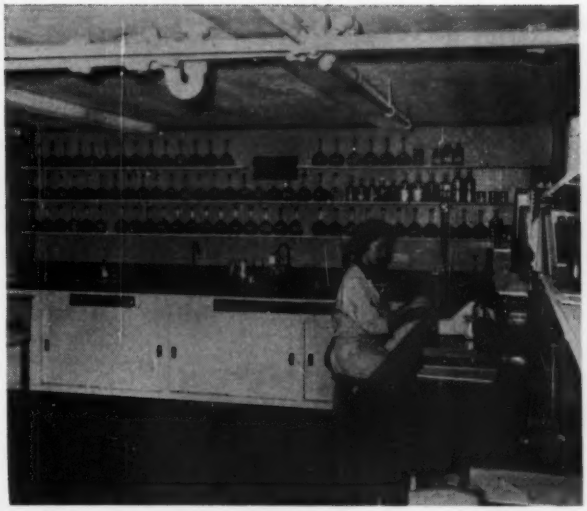
The operator brings the bath to the boil in 45 to 60 minutes, holds it for the dyeing period. He takes the first sample after the lot has been at temperature for an hour.

Butte figures its formulas very carefully, and with the help of automatic controls, the company needs few if any color adds to produce a wanted shade. Normally, it takes a dye load 3½ to 4½ hours to be completed.

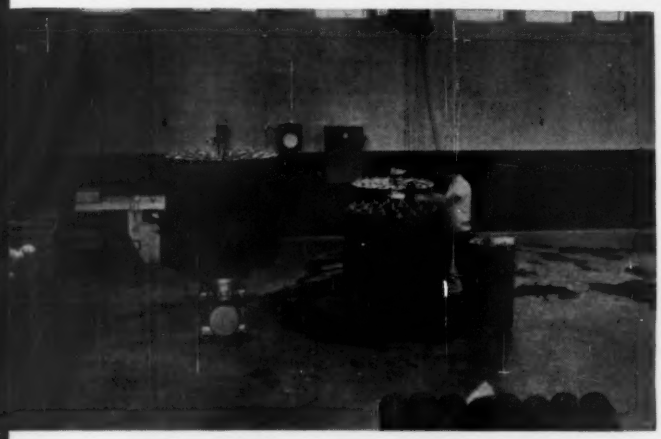
Then Butte thoroughly rinses the yarn. A finishing bath completes the process. Butte applies a finish to the yarn that aids in the knitting process to come.

Butte hoists the finished yarn out

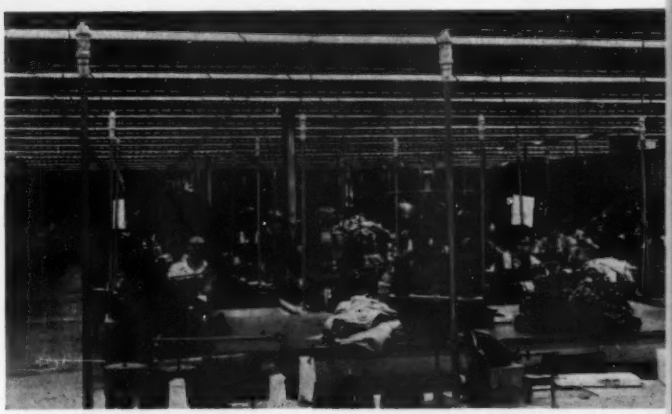
STAINLESS-STEEL tanks feed dyes and chemicals to the machines. This drug room is entirely separated from the dyehouse, and has its own ventilating system.



TESTING equipment and work bench are the tools of the laboratory technician, Dicksie Gunter, shown here at the yarn scales.



PORT DRYERS and an extractor (hidden behind load on dryer) complete present major machines. There's plenty of room for more units when Butte wants to expand.



SEWING ROOM boasts over 150 sewing machines. Air conditioning and adequate lighting make working conditions ideal.

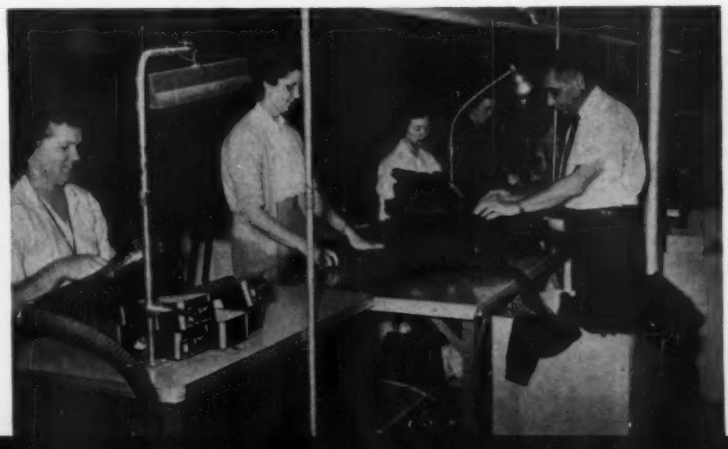
of the dye kettle and puts it in an extractor where air under pressure blows out all excess water and starts the drying process. After 45 minutes in the extractor, the yarn is pulled out and put on a port dryer.

Hot air at 200 F. is forced through the packages to remove the rest of the moisture. Higher temperatures would speed the process, but Butte finds that yarn is stronger and knits better if it is not over-dried by excessively hot air. Butte says the yarn is adequately dry in 3 to 3½ hours.

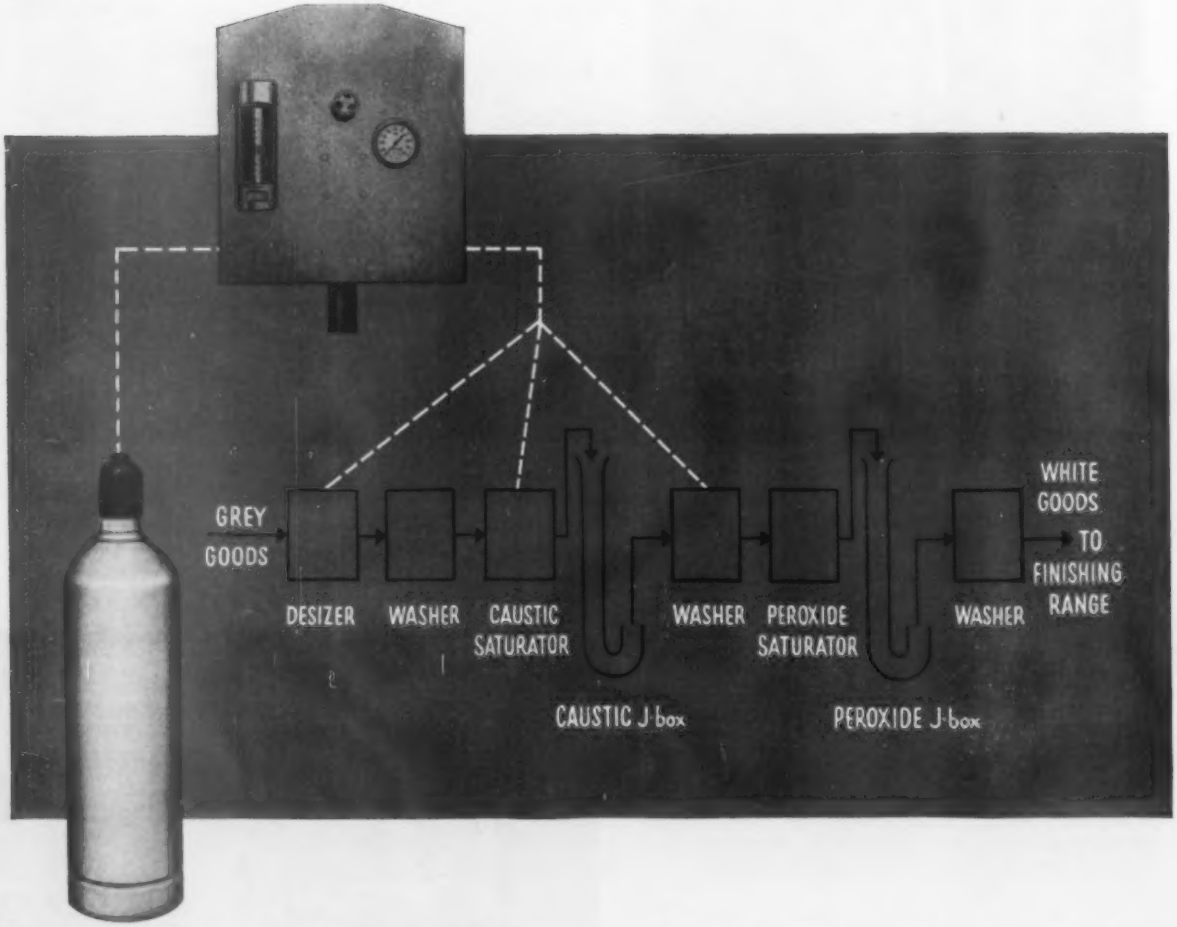
Finally, the technician completely checks out each batch in the laboratory to be sure that it meets rigorous quality standards set by the mill for its products.

Next step—on to the sewing room, pressing and finishing, and final inspection.

FINAL INSPECTION and touch-up work insure quality and precede boxing for shipping. Warehouse and shipping areas are adjacent to manufacturing.



THE PENNSALT DIRECT CHLORINATION PROCESS HELPS CUT YOUR BLEACH CHEMICAL COSTS!



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*Patent applied for

(See our complete listing in CHEMICAL MATERIALS CATALOG)

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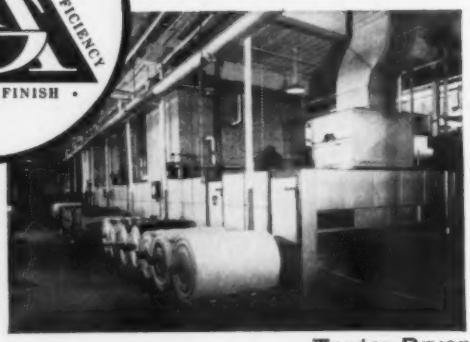
Carpet Dryer

Dye Range Dryer



Tenter Dryer

DRYERS... CURING UNITS

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M-R

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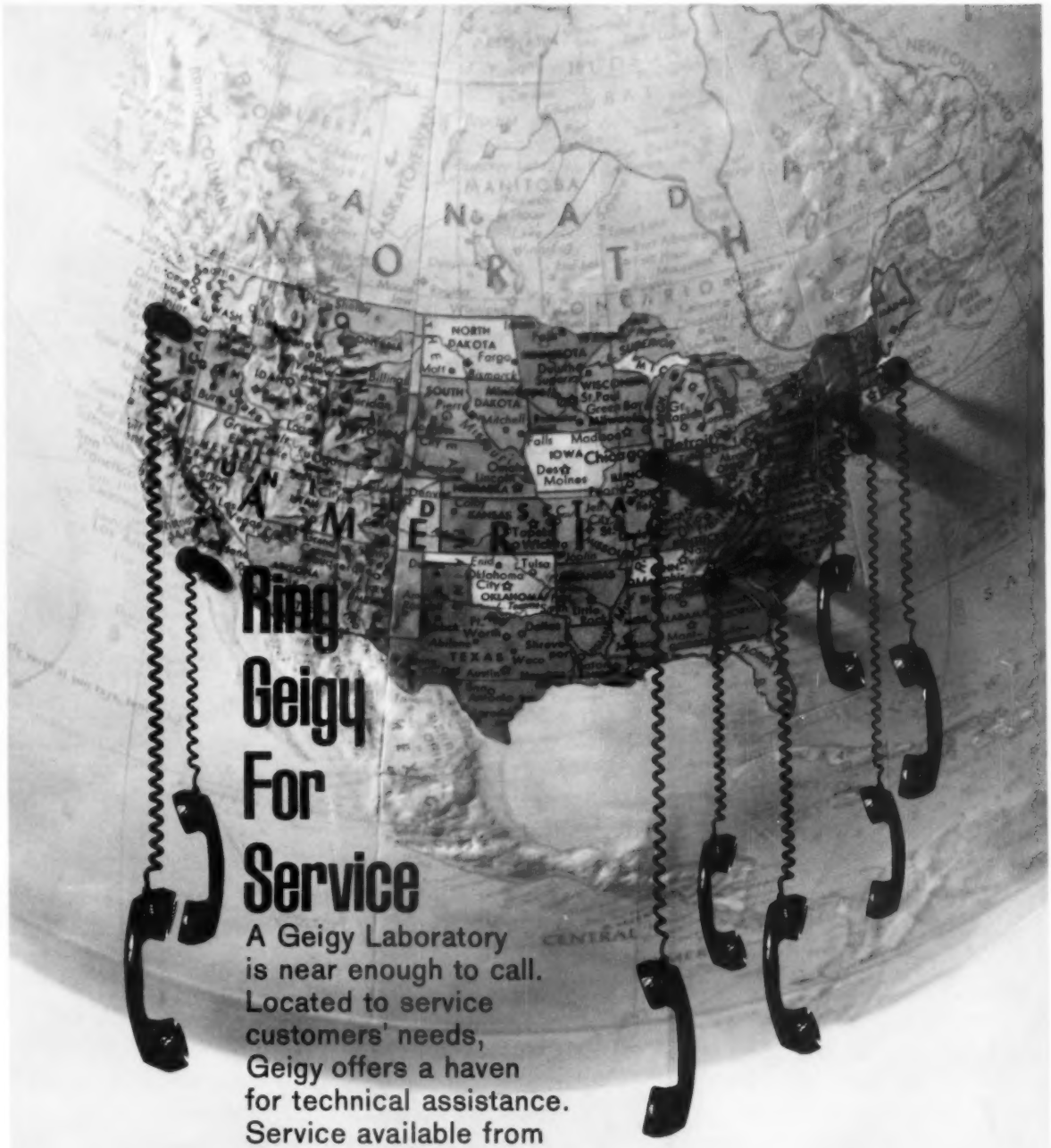

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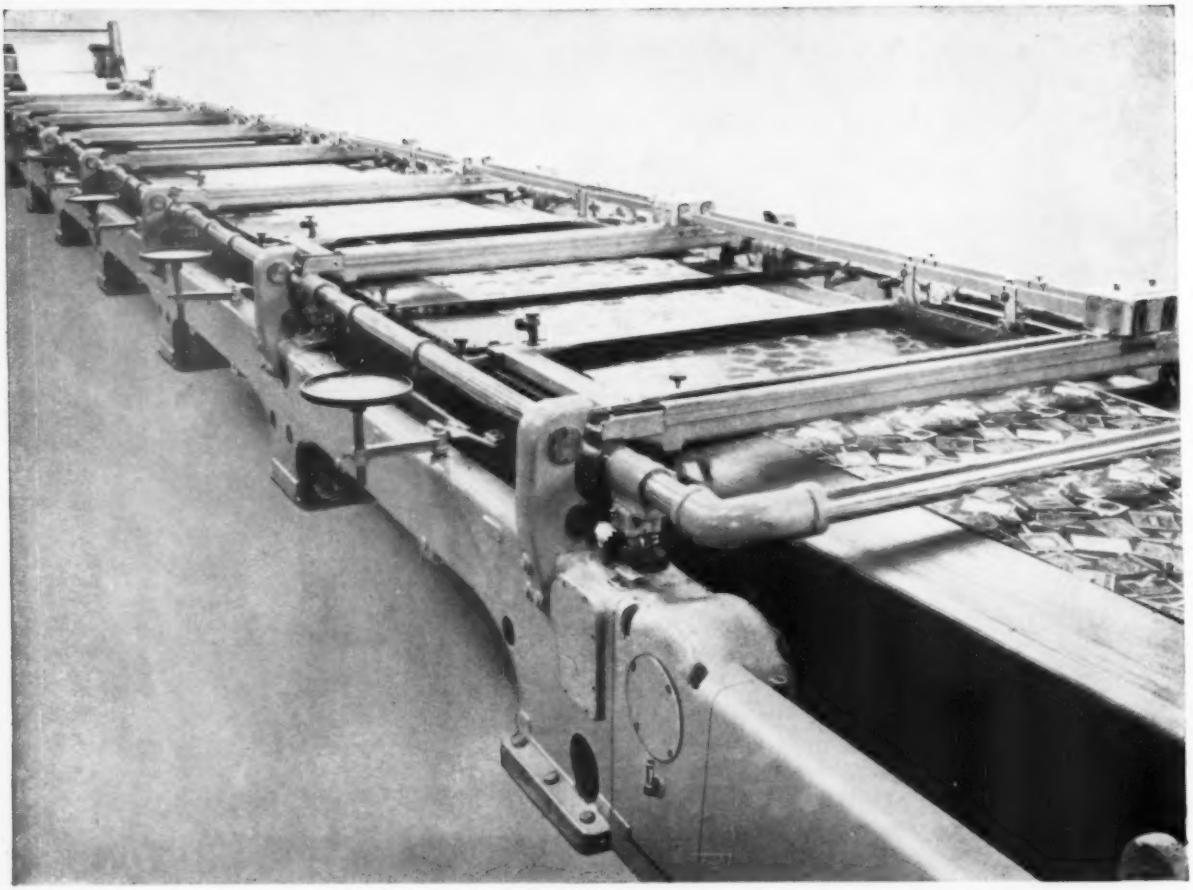

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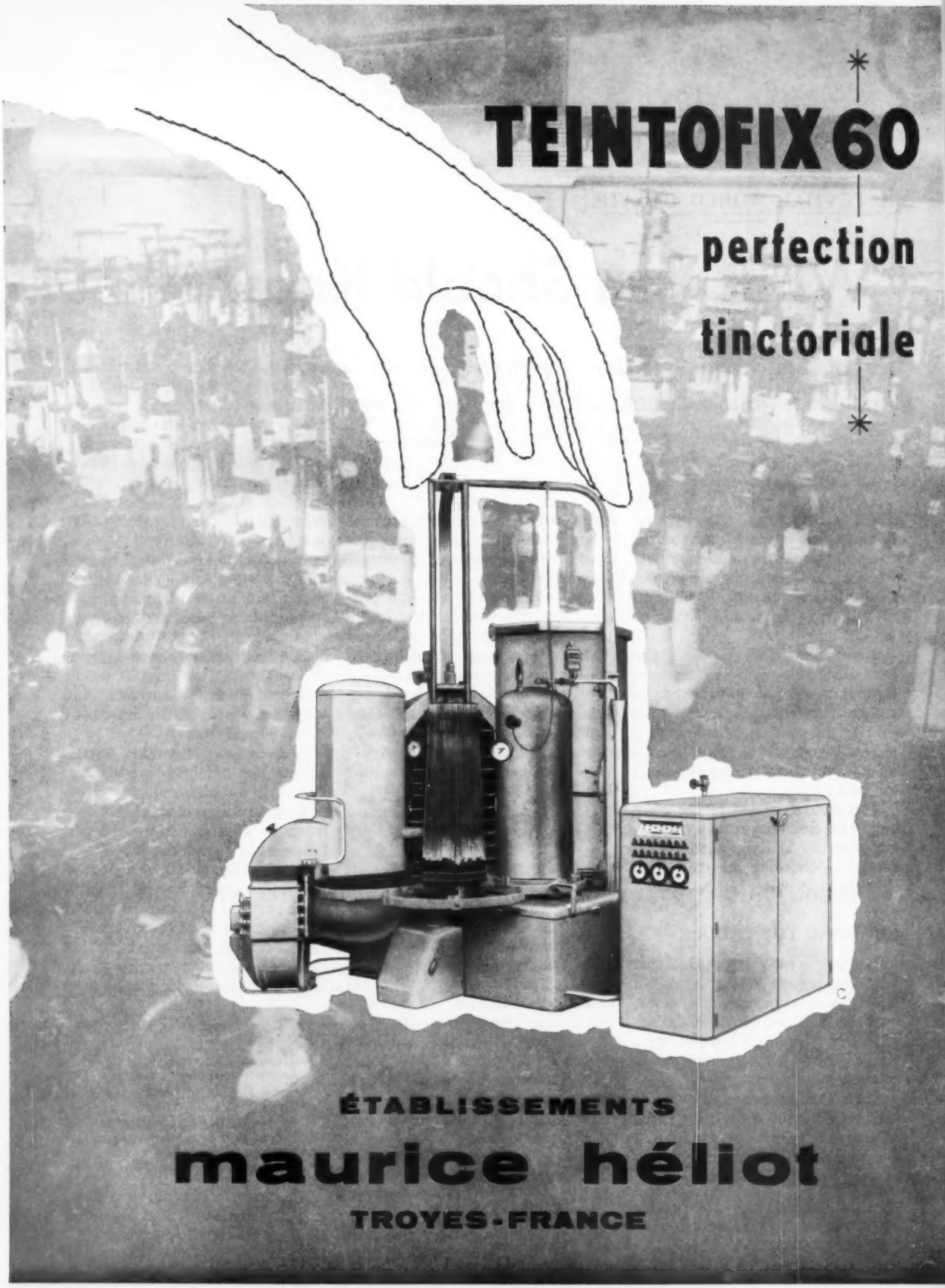

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A TEXTILE WORLD UPDATE

What You Should Know About

Vat dyeing equipment: How to pick it and how to use it. Installment 8 of TEXTILE WORLD*'s helpful refresher series brings you up to date on what goes into today's machines.*

THE TOOLS you use for vat dyeing are just as important as the technical processes and materials. (You've read about those processes in the seven preceding installments of this TEXTILE WORLD series on vat dyeing.)

Here, in these pages you'll find facts on the general specifications for major units used in vat dyeing—specifications that represent good practice in machine manufacturing today. What's more, you'll get tips on how to operate these machines for best results.

The padder is one of the most important machines in the vat dyeing process. And you can't be too careful in choosing the unit that's right for your operation.

CHOOSING THE PADDER

Here are some things to look for in seeking a good padder: a massive frame, massive and rigid roll cores, heavy linkages and bearings, slideways free from blacklash and play, and a positive and accurate means of applying pressure.

There's a good deal of controversy over the comparative merits of dead-set, lever-set, pneumatic-set, and spring-set loading. And in spite of the theoretical advantages of the three latter types, some experienced dyers prefer the dead-set type because of its simplicity and positive action.

Most dyers prefer two-roll padders over three-roll padders in applying vat dyes. The three-roll padder may have advantages if goods are very heavy, dense, or poorly prepared. But it is no substitute for good preparation. Generally, you'll need more tension in operating a three-roll padder to prevent a slack loop from forming between the first and second nips.

11 TIPS ON ROLLS

1. Large rolls flex less than small ones and are generally more satisfactory. (Modern pad rolls are 8 to 24 inches in diameter.)

2. Excessive wear in linkages and vertical slides, weak springs, or a cracked roll core may be the cause of trouble when a new or reground pad fails to give good results. You should keep all bearings and linkages in good condition.

3. Rubber rolls should have a massive core that resists deflection under loading. Most mills prefer one rubber-covered roll running against a stainless-steel roll. But some mills use two rubber-covered rolls.

4. The average rubber cover is 1 inch thick and you can reground it down ¾ to ⅝ inch before you have to recover it. As thickness decreases, relative density and squeezing effect increase.

5. A cold roll is denser than a hot one and will give a lighter shade at the start of a run. It's good practice to run rolls in hot water before you start a run.

6. Hard rubber rolls in common dyehouse use run from 0 to 30, measured in Pusey & Jones Plastometer units (Table 1); softer rolls, 35 to 90 units.

7. Density is important, but resiliency and durability are also important in a rubber roll.

8. Synthetic rubbers have been found to give generally good performance in dyehouses.

9. The effective force in removing surplus dye liquor from a fabric is the pressure in pounds per square inch of nip area. For any specific padder loading, this force is greatest for hard rolls and a narrow nip. Here's how you figure this force:

$$p = \frac{2L}{\pi a^2}(a^2 - x^2)$$

p = Pressure at any point in the nip x inches from center of nip.
L = Total loading in pounds per linear inch of nip.
a = Half the nip width. (Width can be determined by a carbon-paper impression.)
x = Distance from center of nip.

The width of the nip area has a great influence on the squeezing effect of the nip. For example, if a roll that has a 30 plastometer density is loaded against a roll of zero

By the late O. W. CLARK
Dyes Department
American Cyanamid Co.
Bound Brook, N. J.

Vat Dyeing Today—Part 8

plastometer density (a dead-hard roll) at 436 pounds per linear inch of nip, maximum pressure at the nip center will be 460 psi. But if the same pressure is applied to a dead-hard roll and a roll that has a 60 plastometer density, nip pressure will be only 280 psi.—about 60% less.

10. Hard rolls and a narrow nip may be most efficient if your only problem is extraction of surplus liquor. But the situation is different if you're padding on dye. That's when you want complete penetration and uniform distribution of dye liquor throughout a fabric, as well as efficient removal of surplus liquor. Hard rolls and a narrow nip just don't distribute dye liquor in a satisfactory way.

One of the serious disadvantages of hard rolls is chatter, especially when the peripheral speed is over 40 ypm. Chatter gives nonuniform impregnation of dye.

Hard rolls are especially bad when a seam passes through, for the roll will jump and allow 2 to 3 inches of cloth to go through without any nip pressure—or with much less than normal pressure. This results in a wet spot just behind the seam. And if the cloth is wound into a roll after the padder, the excess moisture migrates to adjacent layers above and below the seam, causing bar marks. These may show on two or more layers above and below the layer containing the seam.

11. Uniform distribution of dye liquor throughout a fabric and simultaneous efficient removal of surplus liquor call for high applied pressure, a combination of one hard and one soft roll, or two moderately soft rolls at each nip. Maximum removal of surplus liquor minimizes color migration, build-up on guide rolls, and (when drying equipment follows a padder) drying cost. Hard rolls lack resiliency and durability. And it's hard to get and maintain uniform pressure along the entire length of the nip when you use these rolls.

WHY CROWNING?

Some rubber-roll manufacturers figure that a plastometer density of about 40 to 50 is a good compromise between density and dura-

TABLE I—
Three Ways to Express the Hardness of Rubber Rolls (Units)

(Hardest at top)

Shore Durometer	Pusey & Jones Plastometer—⅛-in. roll	Adams Densimeter	Shore Durometer	Pusey & Jones Plastometer—⅛-in. roll	Adams Densimeter
100	0	0	65	76	38
98	5 to 15	2 to 5	63	80	40
95	15 to 20	5 to 7	60	90	45
90	30	12	55	106	53
88	32	13	54	110	55
85	36	14	50	124	62
82	40	16	43	160	80
80	44	22	42	170	85
75	52	26	40	175	88
71	62	31	30	250	125
70	64	32	27 to 29	265 to 285	...
67	70	35	.....	350 to 400	...

bility. But many mill men believe that a softer roll with a plastometer density of 60 to as low as 90 is necessary to produce well-penetrated dyeings with a smooth-surface appearance. They also feel that a roll within this density range gives less side-shading trouble and requires less frequent grinding than rolls with greater density.

Because troublesome deflection occurs when rolls with a face of 50 inches or more are heavily loaded, you'll have to grind these padder rolls to a barrel crown in the center so that the circumference at the center of the roll is greater than at the ends. But if your rolls have a face of less than 50 inches and the cores are massive enough, you can operate them satisfactorily without crowning and with a true cylindrical surface.

Crowns of $\frac{1}{64}$ to $\frac{1}{16}$ inch usually give good results—for most types of padder operations using a 50- or 60-in. padder with 18- or 20-in. diameter rolls, operating at about 10 tons pressure. If you have no previous experience, take the average and try a $\frac{1}{32}$-in. crown on your rolls.

The proper degree of crown depends upon several factors: density of roll, length of roll, diameter of roll, rigidity of core, load applied to rolls, type of bearings, and construction of cloth to be padded. When changing production from one cloth to another of radically different weight or construction, it's common practice to change to rolls having a different crown. Europeans frequently wrap rolls with cloth to give the same effect as crowning, thus eliminating the need for additional spare rolls.

A change of rolls may also involve rolls of different density. You can easily measure width and character of a padder nip by inserting interleaved sheets of white and carbon paper in the nip and then applying the desired pressure to the rolls. When cloth is to be given a Sanforized finish, the rolls are sometimes given a slightly excessive crown. This way, the center of padded cloth is dyed a trifle lighter than the selvages to compensate for the slightly closer structure at the center of a Sanforized fabric.

The squeeze rolls remove liquor loosely held on the surface of cloth, yarns, and fibers. But they don't remove water held within the fiber structure. This water of imbibition, as it is called, is for a fiber that has been completely saturated (Table 2).

TABLE 2—
How Much Water Fabrics Retain After Surface Water Is Squeezed Out

Fiber	Water of Imbibition	Fiber	Water of Imbibition
Viscose rayon	104	Wool	39 to 42
Cuprammonium rayon	90	Silk	33
Mercerized cotton	46	Acetate rayon	28
Linen	46	Nylon	13
20s/2 natural cotton	42	Vinyon	11
		Dacron	7

WHAT IS PICKUP?

In dyehouse vernacular, the total amount of liquor retained in a fabric as it leaves the squeeze rolls is called the pickup. Here's the formula for percent pickup:

$$\text{Pickup } (\%) = \frac{s}{c} \times 100$$

s = Weight of retained dye solution
c = Weight of cloth before padding

Pickup is the net effect of two actions—sorption of dye liquor from the dyebath in the padder trough and extraction of surplus dye liquor by the squeeze rolls. For well-prepared cotton or viscose fabrics, the following behavior is general:

. . . *Pickup decreases* as the temperature of a dyebath is increased from 80 to 200 F. If you add a wetting agent to a dyebath, the pickup will decrease as the nip pressure is increased.

. . . *Pickup varies* with fiber, weave, and pressures involved.

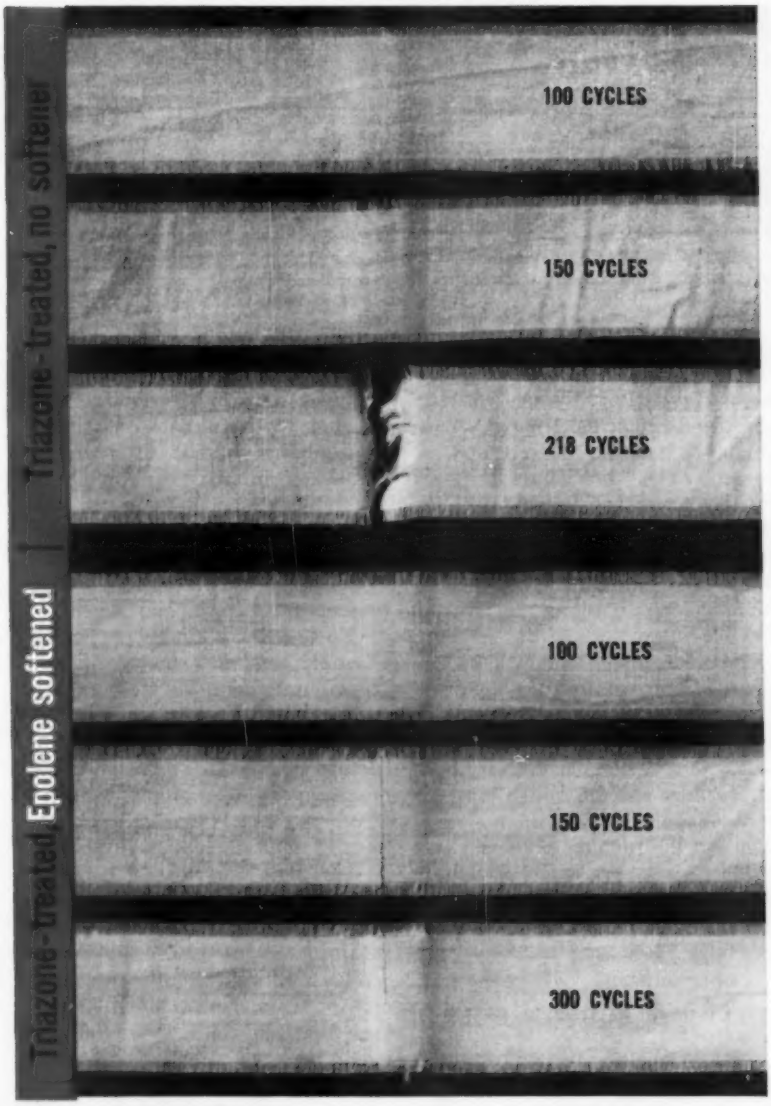
LOADING LIMITS SET UP

Excessive loading increases roll and bearing wear and increases power consumption. You won't get any extra advantages in loading the padder beyond its optimum point. High loading decreases the pickup. But at 436 pounds per linear inch of nip, the practical limit has probably been reached with respect to reduction in pickup. High loading improves penetration, although there again the 436-lb. loading is probably a practical limit.

A heavily loaded padder with one soft roll at each nip give less trouble from side shading and nonuniform expression than a lightly loaded padder. Reason: Under heavy loading conditions a considerable variation in pressure is required to affect the pickup noticeably. Each dyehouse should determine optimum loading for its padder.

Typical loads vary from 6 to 12 tons for the usual 60-in. face padder with rolls 18 to 20 inches in diameter. Usually, you would operate a modern 60-in. padder with a 15-ton

The Stoll-Flex Abrasion Test demonstrates the increased strength given to a resin-treated cotton fabric by an Epolene softener.

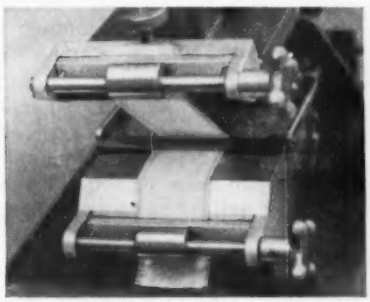


IT is axiomatic in the textile industry that the finishing resin alone does not a wash-and-wear fabric make. In fact, the variables are many, and often complex.

Of primary importance is selection of the softener. If properly chosen to match the specific type of finishing resin to be used, the combination can provide the optimum in tear strength, abrasion resistance, crease recovery, hand, and sewability for the treated fabrics.

Eastman offers three emulsifiable types of polyethylene resins for use as softeners... Epolene E-10, Epolene E-11, and Epolene E-12. These low-molecular-weight polyethylenes are suitable for either nonionic, anionic, or cationic systems, easily forming emulsions that are stable and low in color.

Epolene polyethylene emulsions have been evaluated under operating conditions with all of the principal wash-and-



Stoll-Flex Abrader

wear resins in use today. These include triazone, triazene, melamine formaldehyde, methylated melamine formaldehyde, dimethylol ethylene urea, and methylated urea-formaldehyde type finishing resins. The results of these test procedures are available to aid you in selecting the right softener for your finishing requirements.

For further information about Epolene textile emulsions, their preparation and use, contact your Eastman representative, or write Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, Kingsport, Tenn.

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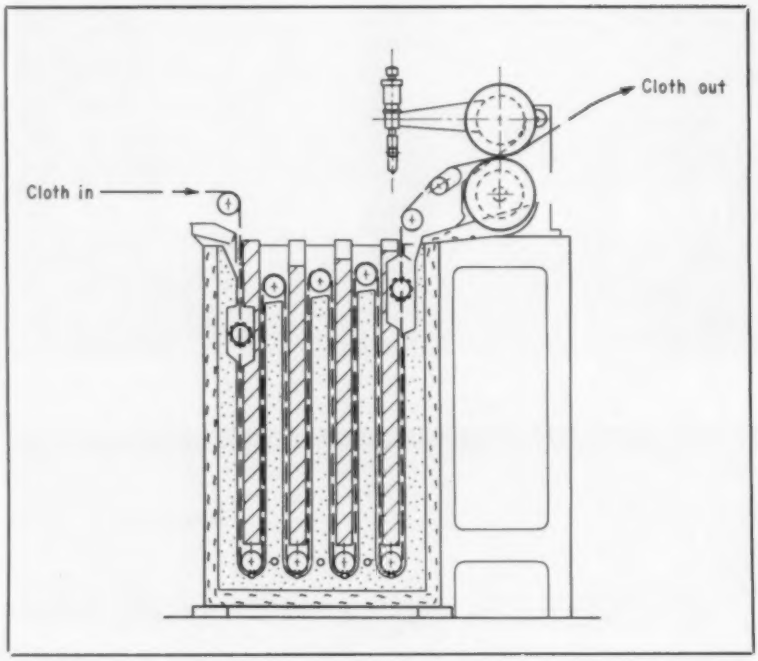
maximum rating at 10 to 12 tons.

Besides pickup, you must consider preferential sorption in padding. Depending on what conditions are, either dye or water may be sorbed preferentially.

When you pad from solutions under conditions where the substantivity of a dye is effective, you always pick up more dye than water and the dye-pickup factor is greater than 100. When padding from dispersions, pigment and water are more likely to be picked up at the same rate, and the dye-pickup factor is more likely to be 100.

The pickup factor can be less than 100 when you pad through a dye dispersion where natural-warp yarn preferentially picks up water to dye. Because shade control is facilitated when dye and water are sorbed at the same rate, you should aim for a dye-pickup factor of 100. Padder design as well as padder operation aims at this ideal, too.



NARROW PASSAGES contribute to good turbulence and keep liquor volume low in a Williams unit, which causes and controls rapid circulation.

GETTING BETTER TROUGHS

• **Small-volume troughs**—You'll gain three advantages by using padder troughs with a very small volume:

• Minimum tendency for dye-pickup factor to deviate from 100.

• Rapid liquor turnover, which minimizes scum formation.

• Little liquor left at the end of a run.

A brief-immersion type of trough mainly furnishes liquor to be carried up to the nip by the cloth, where the major portion of impregnation takes place through hydraulic and mechanical forces.

• **Jacketed troughs**—If a trough is jacketed, the top of the jacket must be well below the minimum liquor level to prevent liquor and foam from drying out and falling back into the dye bath. Too high a jacket temperature may bake solids out on the walls and cause trouble. Automatic level and temperature controls make it easy to maintain uniform shades.

• **Continuous-flow troughs** — You'll gain additional advantages with a circulatory system whereby the dye bath in the trough is continuously removed, filtered, and returned. This procedure removes lint and scum and keeps the liquor surface in the trough clear and free from excessive foam or scum. What's more, you'll find it a reliable method for controlling the level of the dye liquor.

A padder trough usually has foam guards that closely hug the dry cloth as it enters the dye bath. These guards protect the cloth from contact with foam or scum. Every part of a padder and the trough must be readily accessible to visual inspection and the running cloth must be in clear view. You'll find it helpful if your trough can be lowered away from the squeeze rolls for easy cleaning.

WHAT THE BOOSTER DOES

"Booster" is the name given to a box following a padder. It is usually equipped with an adequate number of guide rolls, a pair of squeeze rolls, a heating coil or jacket, and an auxiliary feed tank to supply chemicals. With a booster you can prolong dyeing time and improve color yield and fastness. The original form of booster box is often replaced in present practice by an ingenious device called a Williams unit or by a padder with an extra trough and several immersion rolls.

The Williams unit (drawing above) carries the bath in four very narrow chambers. Its design minimizes bath volume, promotes turbulence, and causes and controls extremely rapid circulation of a bath. At the same time the temperature of the bath is accurately maintained by a thermostatically controlled steam jacket.

The bath volume of a Williams unit for 60-in. cloth is about 72 gallons; for 70-in. cloth, about 100 gallons. Often two units are connected in tandem in such a way that rapid

New Rhoplex® acrylic resins for non-stiffening, non-yellowing backing for furniture upholstery

Extremely durable backings and binders for fabrics and carpeting—plus other advantages possible only with acrylic materials—are produced by two new self-crosslinking RHOPLEX acrylic resins that cure to tough, resistant polymers under catalysis and heat. The usual vulcanizing agents, plasticizers, and anti-hardening agents are not needed with RHOPLEX HA-8 and RHOPLEX HA-12.

RHOPLEX HA-8 is a highly durable acrylic polymer which produces finishes that withstand dyeing, washing, and drycleaning. It may be used alone, or in combination with fillers, thickeners, or other RHOPLEX resins.

RHOPLEX HA-12 is similar to RHOPLEX HA-8, but produces firmer finishes with improved tensile strength, and may be used with RHOPLEX HA-8 to obtain intermediate effects.

Both products are effective binders for non-woven fabrics, adhere well to synthetic fibers, are ideal for backcoating automotive and furniture upholsteries, and are good pigment binders. They resist discoloration and stiffening with age. They do not discolor fibers since the cured polymer is water-clear.

Other RHOPLEX binding and backing materials, such as RHOPLEX HA-4 and RHOPLEX B-15 may be used to modify RHOPLEX HA-8 and RHOPLEX HA-12.

Write Dept. T-1 for technical bulletins summarizing properties and uses of Rohm & Haas RHOPLEX acrylic materials for fabric finishes, backcoatings, and binders.

ROHM & HAAS

PHILADELPHIA 5, PA.

RHOPLEX HA-8 HA-12

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interchange occurs between the baths of the two units. By using one or two units and by variating cloth speed and bath temperature, you can get a considerable amount of operating flexibility.

WHAT THE STEAMER DOES

The steamer is a steam-filled, air-free chamber with an adequate number of guide rolls through which cloth impregnated with dyes and chemicals is led. The steamer promotes reduction and fixation of vat dyes, and fixation of other dyes. It has an overhead steam chest to prevent condensation on the roof and subsequent dripping, which would cause water spots on cloth enroute through the steamer. Suitably placed orifices distribute and diffuse the entering steam (drawing below).

WHAT'S A GOOD JIG?

Dye jigs used today in vat dyeing are usually built of corrosion-resistant steels wherever necessary. The frames, guide rolls, and bearings must be able to stand up to hard service—even abuse of careless operators. Driving and braking mechanisms must be equally rugged and not too complicated. Drains are made big enough to speed up bath changes, and steam and water lines are sized for speedy results.

The most modern jigs have automatic reverse gear, and some even feature relatively constant speed from one end of the roll to the other. These refinements help reduce labor cost and establish more even processing conditions.

MOLTEN-METAL MACHINE

This machine is widely used in England but has found little use in the United States or Canada up to now. This is probably due to two reasons: (1) prior widespread installation of pad-steam and Williams-unit equipment that saisfactorily meets the needs of these countries, and (2) certain licensing agreements that seem burdensome to many United States mills.

What it's made of—The heart of the Standfast molten-metal machine (manufactured in the United States by Rodney Hunt Co. under license) is a narrow cast-iron U-tube containing a eutectic alloy such as Lipowitz metal, consisting of approximatelv 13.3% tin, 26.7% lead, 50.0% bismuth, and 10% calcium. This alloy melts at 164 F., and when used in vat dyeing the alloy is heated at a temperature of 205 F.

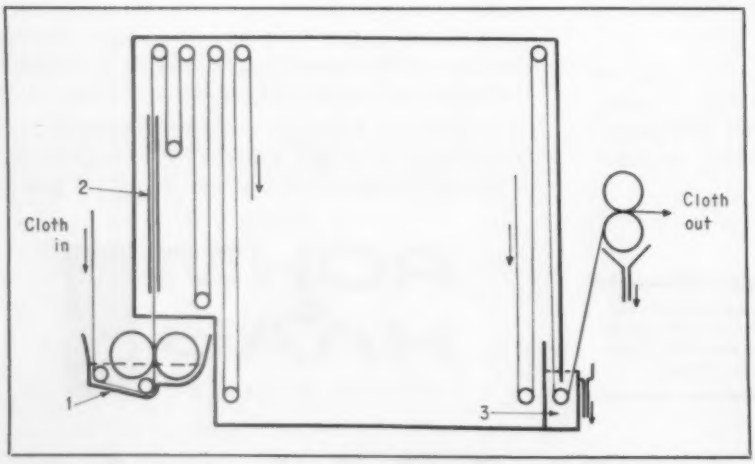
How it works—The entry side of the U-tube is lined with stainless steel. Within this liner an 8-in-deep 1-gal. dyebath floats on top of the molten metal. At the exit side of the U-tube, there is a similar bath containing a 5 to 10% solution of Glauber's salt or sodium bicarbonate. At the bottom of the metal column, the pressure is 20 pounds per square inch. The pickup of liquor in the device is 40%. The cloth passes through about 10 feet of metal.

Why it's good—An advantage of the molten-metal machine is the uniform squeeze exerted by the molten-metal bath and the elimination of the problem of securing a uniform-nip pressure when squeeze rolls are used. But freedom from side-shading and uneven dyeing is not automatic, and you'll need accurate control of circulation in the entrance and exit baths. You must carefully regulate the tension of the moving cloth and make sure that it enters the molten-metal bath accurately centered and wrinkle-free.

DYEING BEAMS

The Burlington machine and the Morton Horizontal Revolving beam-dyeing machine have been developed in recent years for dyeing fabric in beam form. In principle, the machines consist of a horizontal kier. A perforated drum somewhat similar to a dye beam on which the cloth is wound, slides into the kier. When in operation, the dye bath is pumped radially through the cloth with periodic reversal of flow. In the Morton machine, you can rotate and thus help the beam in eliminating air pockets. You can operate both machines at temperatures considerably above 212 F. The possibilities of applying vat dyes on these machines are being investigated in several mills.

Other types of dyeing machines in the experimental stage include the Barotor and the Multilap machine, both DuPont conceptions. Vat dyeing in either of these machines has had limited success up to now.



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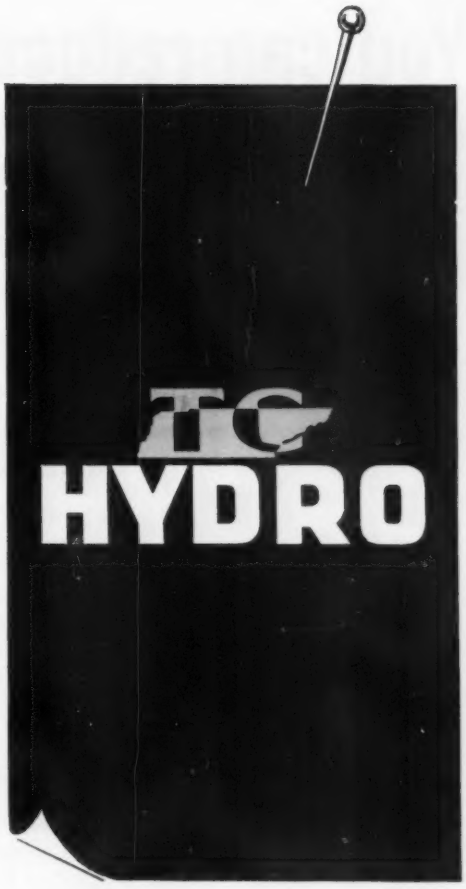

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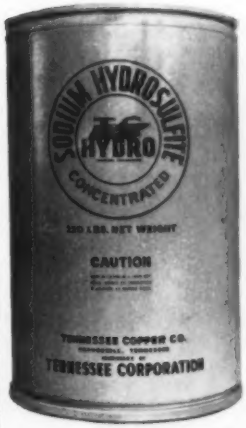

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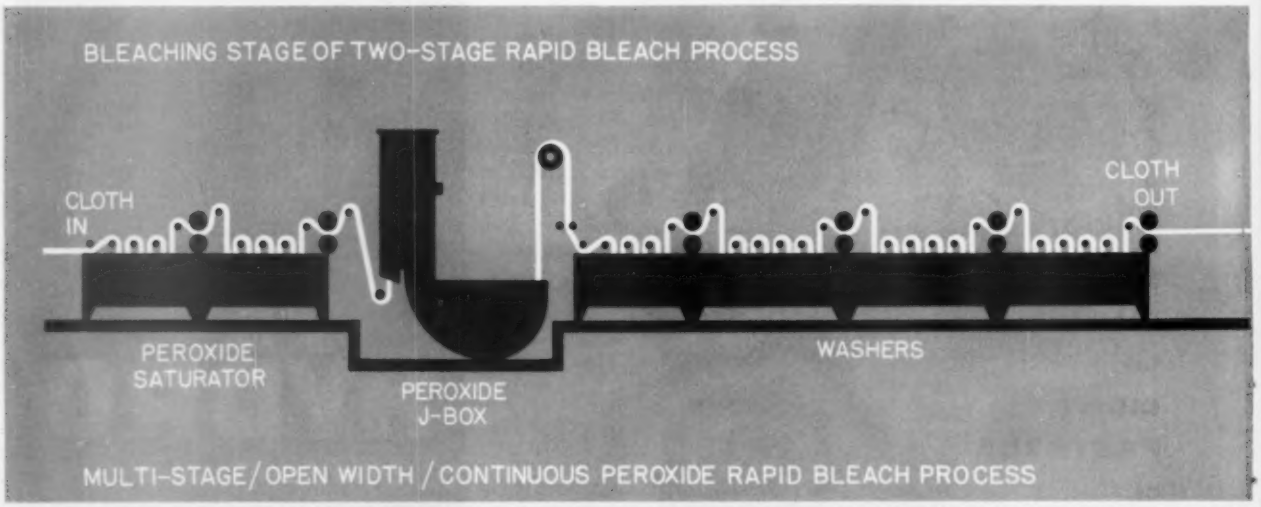

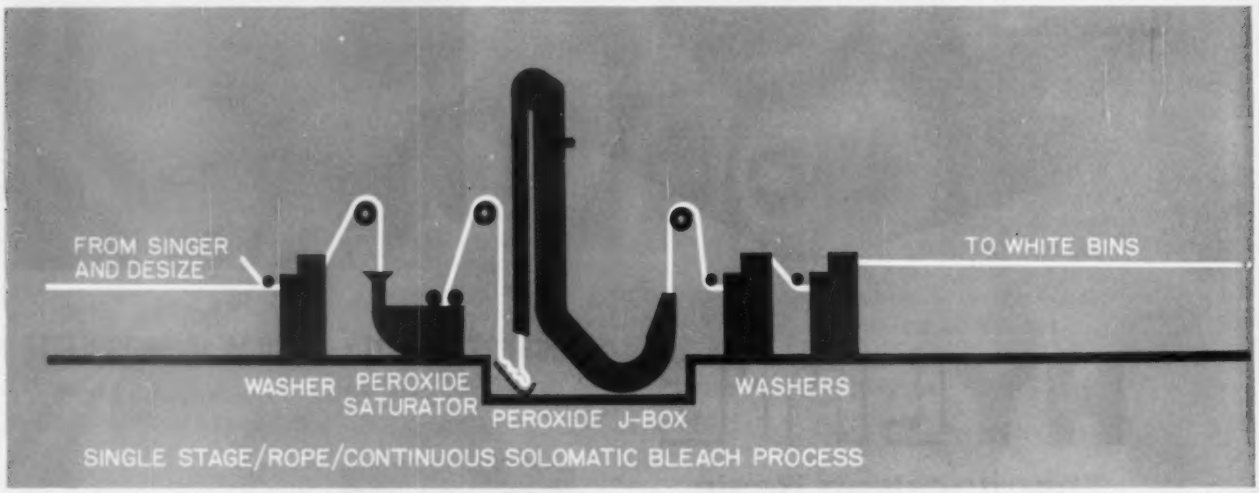

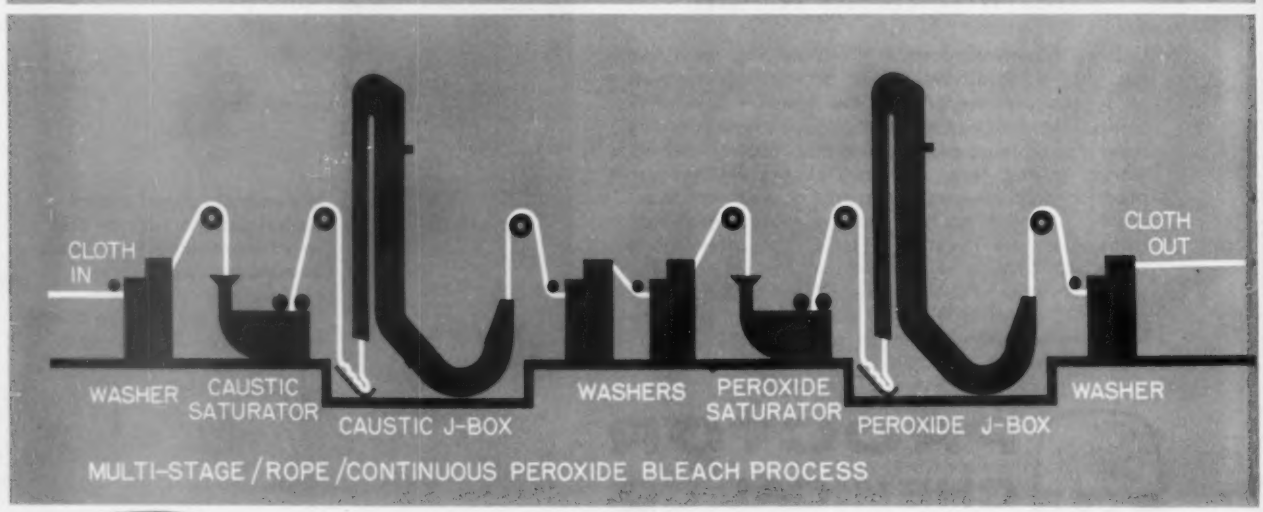

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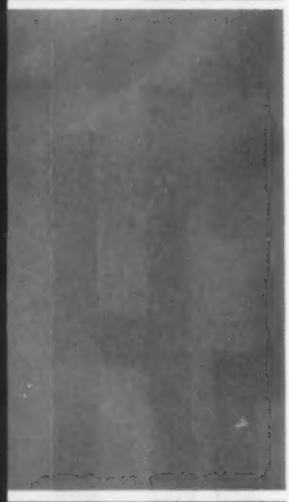

Whether your textile mill is large or small, the basic units shown here can be tailored to your needs. For example, they can be expanded to include desizing, acid souring, drying and/or mercerizing, or designed to fit available floor space.

Reduce costs . . . solve production problems with one of these modern Du Pont continuous processes:

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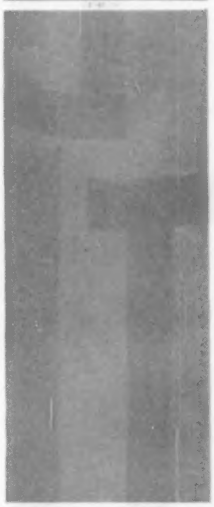
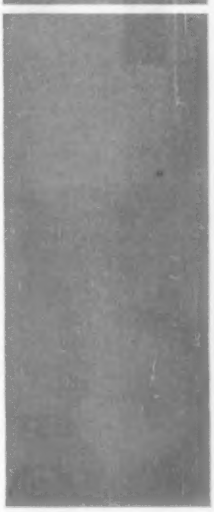
NEW BOOKLET AVAILABLE! For more information, contact your nearest Du Pont technical representative, or write for new booklet* which details all of Du Pont's continuous bleaching processes. Du Pont, Electrochemicals Dept., Peroxygen Products Div., Wilmington 98, Del.





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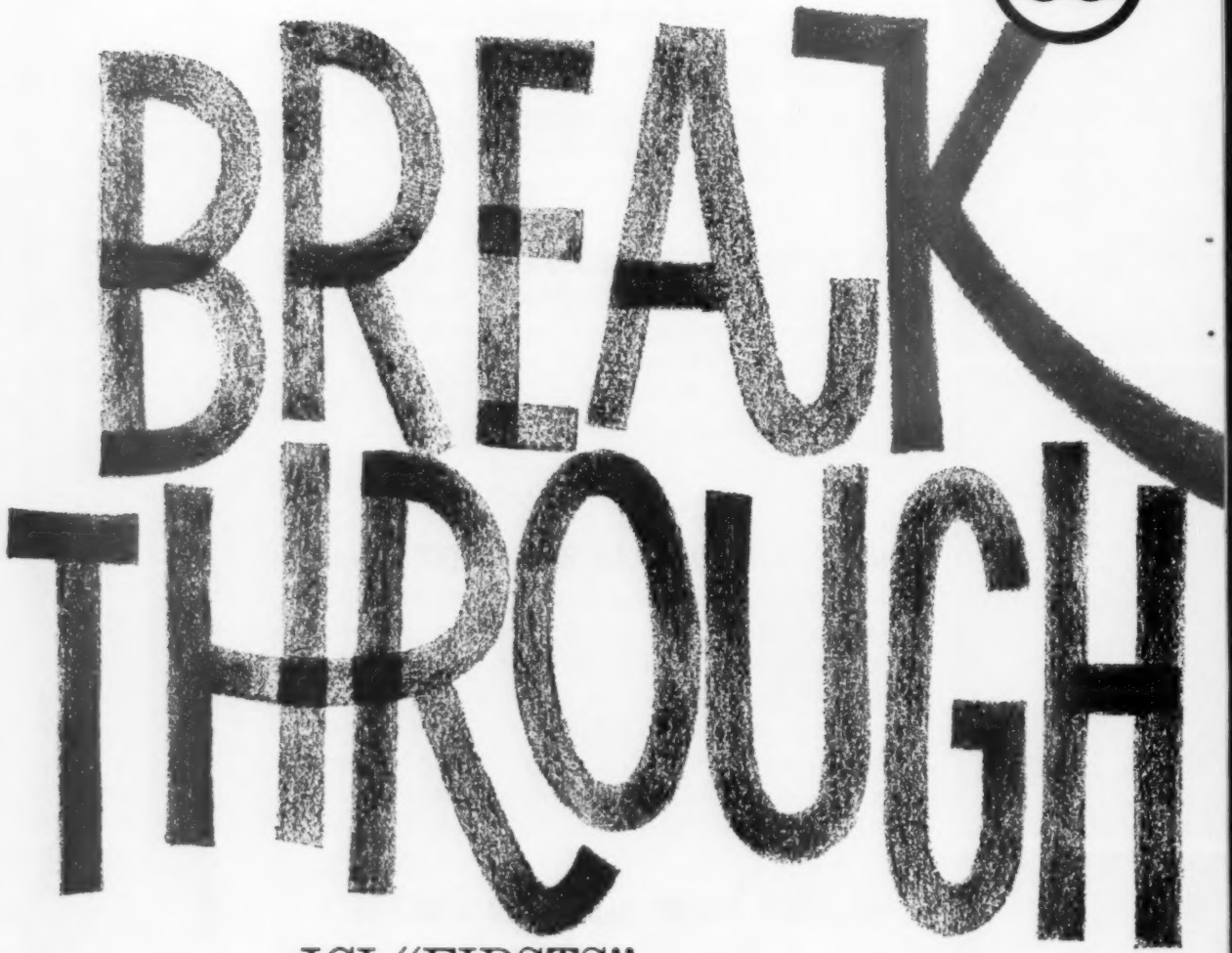

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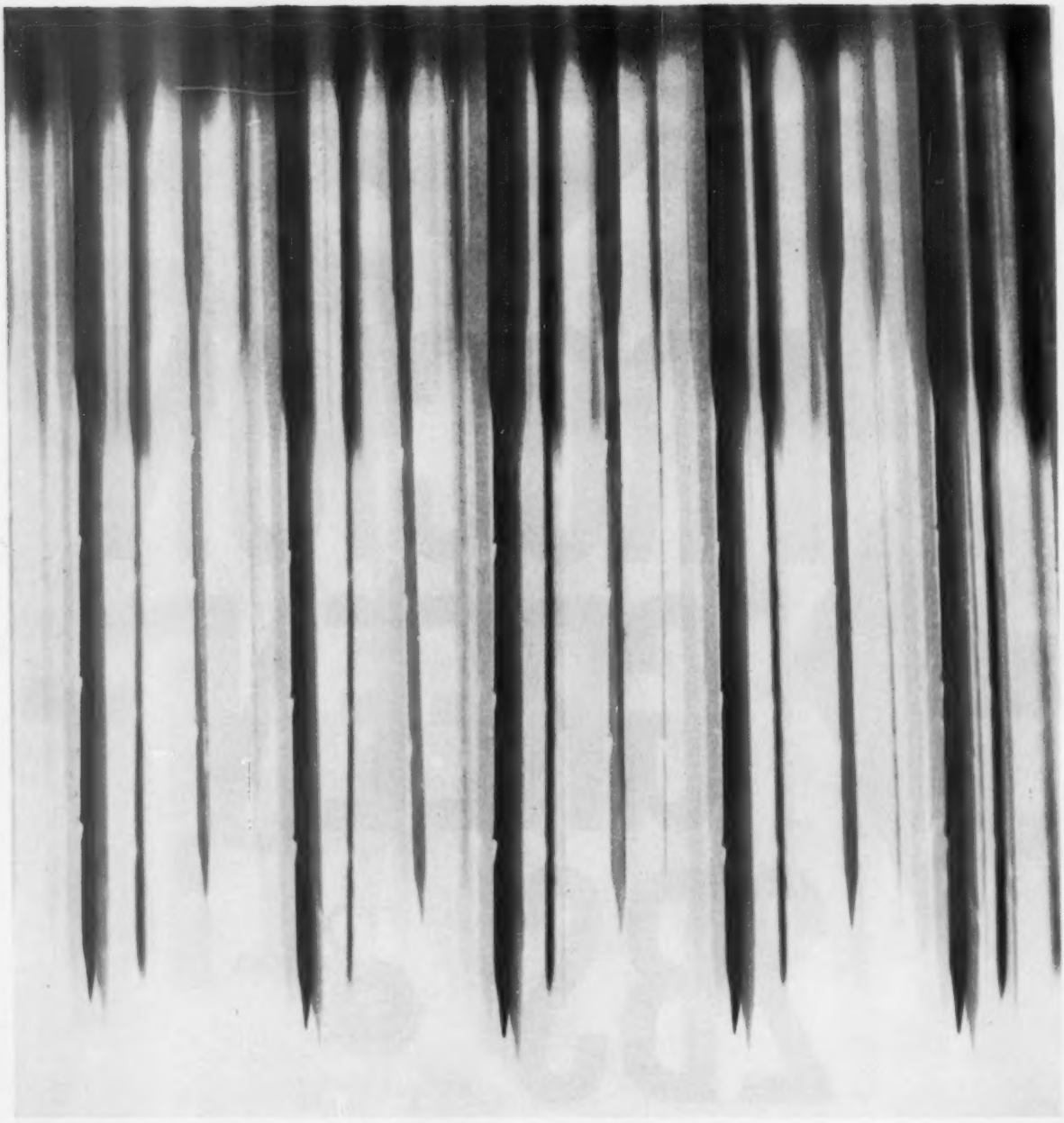

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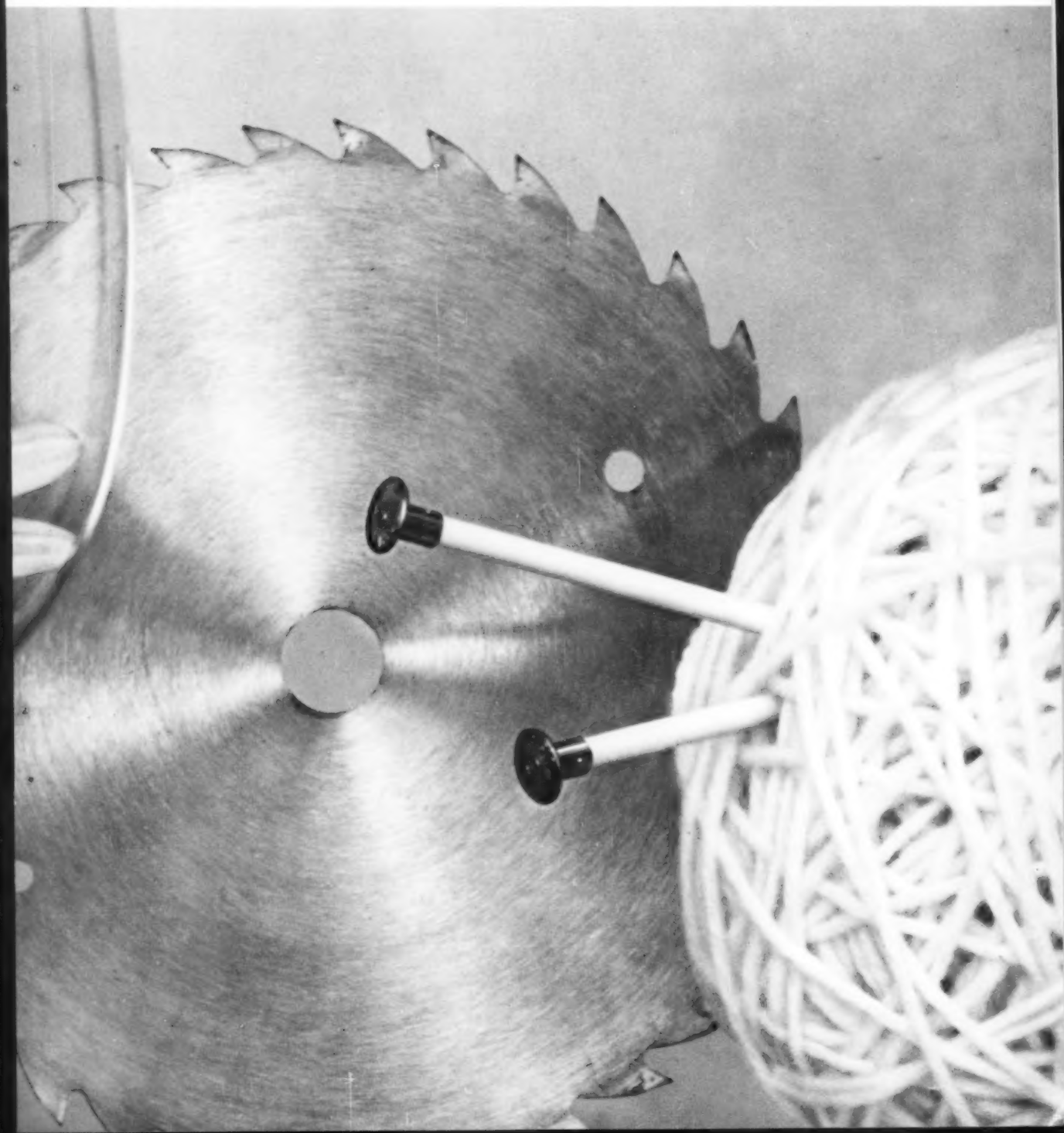

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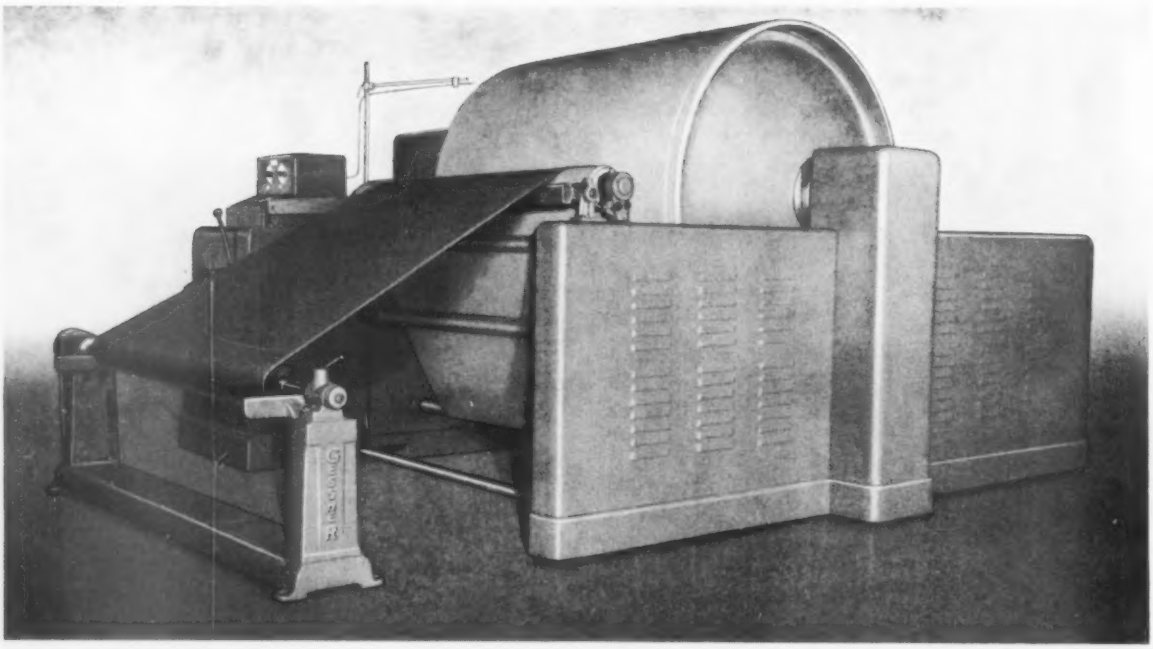

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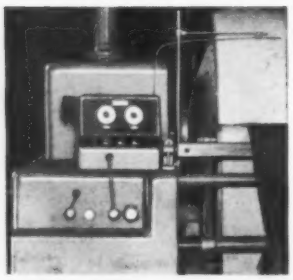

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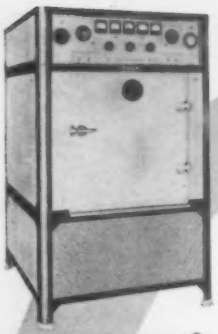

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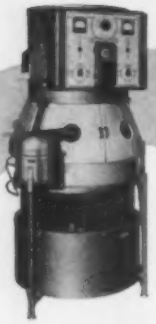

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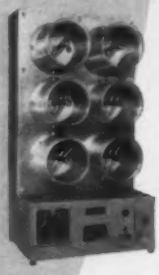

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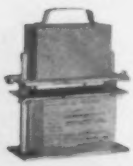

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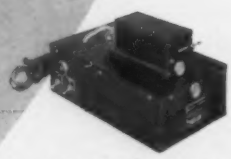

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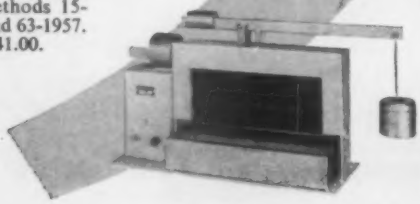

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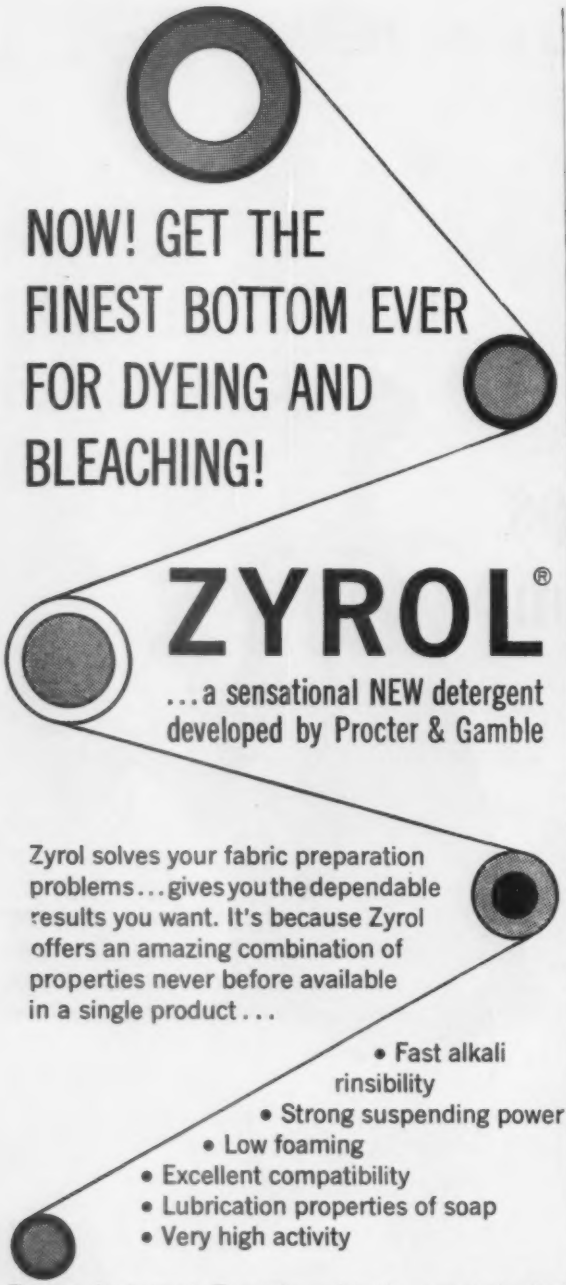

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Work piling up. Time running out. What to do? Don't get frantic—solve your biggest problem by reading the typical causes and remedies and learn . . .

How to Avoid Work Stack-Ups

"OUR biggest headache? Work is always piling up and we never seem to be able to catch up."

That statement by one textile executive is being repeated almost daily in scores of firms of every size and description throughout the country. The problem is an ever-present and recurrent headache. Solve it at one spot and it pops up in another. But there are steps you can take to avoid stack-ups. First, check these points:

- **Do you plan over-all routines?**
- **Do you attack stack-ups** along the whole production line—or just at one trouble spot?
- **Are you constantly on guard** against situations that encourage the pile-ups?

There's no simple formula you can use to solve the problem immediately. But if you can answer "yes" to those three questions, you're on the right track.

Work stack-ups follow many winding and weird patterns; they occur at no fixed time or interval. Checking them should be part of any superintendent's daily routine. In fact, it should be so routine that it becomes second nature.

In many cases, stack-ups require a problem-location procedure to ferret out causes. This should be done both before and after stack-ups occur. Sometimes a purely personal problem causes work to pile up. But generally a pile-up arises from a combination of reasons—none of which is noticeable by itself. For that reason, supervisors often ignore common causes as possible culprits. All but the most observant supervisor will have trouble finding them—unless he will deliberately search them out when stack-ups start to congest his department. Here is a review of some of the common causes and solutions.

By ERNEST W. FAIR
Business Consultant
Boulder, Colorado

CAUSES AND SOLUTIONS

Cause: unequal work volume—This may be due to more production on one day than another, a large percentage of work flow in one particular time period, or a similar situation over which the supervisor has no direct control.

These stack-ups very often originate in a department outside the supervisor's jurisdiction. For this reason, it's important that supervisors practice the widest possible degree of coordination, particularly with the departments processing goods or materials just ahead of your department.

Solution: a fluctuating labor force—This is the ideal method, but unfortunately it's almost impossible to maintain a staff big enough to meet volume in "flood" periods, yet small enough to handle small amounts of work at other times. Some firms have done it—but not many. Their method? By careful charting of the regularity of peak volumes, they figure out the number of employees over the permanent staff required at those specific times. Then they recruit enough part-time people to help during the heavy work periods.

Several companies have created "borrowing" procedures between departments, whereby a cadre of individuals is trained to move from one department to another when stack-ups occur. Such a program calls for selection of the most versatile and capable individuals. It's usually best to keep these task forces small so you can exercise closer supervision and control.

Another method: Find a leveling between the peak and valley of volume of work. Maintain a staff that can handle the peak under stress and relax when it passes over. This method also requires top caliber workers: They must possess better-than-average skills, willingness to work, and ability to cooperate with one another during peak periods when work volume is very high.

Still another plan: Separate the volume of work for each period into (1) that which requires immediate and urgent action, and (2) that which can be done just as well the next day or the day after.

Cause: poor flow of material—Supervisors pay far too little attention to this factor, especially in small firms. Stack-ups or equally damaging slow-downs in work output cannot help but occur in plants where too little attention is given to maintaining a constant flow of material without interruption.

. . . *Turn the page*

There may also be a loss of work time with individuals in each department worrying about finding a solution to his individual department's problem, when one basic over-all problem is affecting all departments. One solution would straighten out each department down the line.

Solution: better planning—Better scheduling of routine production can often decrease the heights of work peaks in many textile firms. You can free more employees to tackle the big day's load by doing some work the day ahead and some the day after each peak period.

Warning: There is a tendency to set up such scheduling and when it starts working smoothly, to ignore it until a virtually complete breakdown occurs.

Constant re-examination of production schedules will help guard against breakdowns in any textile plant. Stack-ups occur less often in plants where routing and production schedules are given constant attention not only in the front office by executive management but on the floor by supervisors as well.

Bad planning, bad scheduling, or no planning can bring this situation about before anyone knows it has happened. Any time spent by an employee waiting for work to do is wasted time—and dollars—whether it's four 15-min. periods during the day or a single hour.

Avoid bad planning. Make sure you set the flow of optional material so everyone is kept busy. This procedure will eliminate stack-ups anywhere.

Short-sighted economics along the production line are also a cause of some staggering time and money losses. Thousands of dollars in worker output, lost through stack-ups in the plant itself, have been caused by budget economies that saved only hundreds of dollars in material flow and handling. This factor always requires the closest observation by supervisors engaged in planning for any department of the textile mill.

Solution: better job assignment—This can also help prevent stack-ups Strict adherence to set routines and chores by each employee isn't always good business. The superintendent should be free to shift personnel so a work pile-up in one section can get maximum attention from everyone available.

When work stack-ups occur, supervisors should immediately search for the cause. They may find there are a few or many employees who are ill-adapted to their work. Herein lies the answer, for these employees may be the hidden cause of stack-ups. Nonsuitability to the job often occurs when employees have been given inadequate aptitude tests. Remember that these tests give general answers for general guidance—not specific aptitudes.

In many cases, work stack-ups are caused merely by improper placement of employees. For example, one man may be able to work at top speed at one job, while another man can turn out only half that volume in the same amount of time.

Here's where good records step in. While visual observation can often hint that such a situation exists, the difference between effectiveness and just-getting-by may be so small, that you can pinpoint it only with facts and figures.

Close examination of such spots can turn up areas where the quickest and most alert employees belong. Taking someone who is not quite as swift or adept at one chore and placing him in a spot where speed or adeptness is not required may iron out this kink.

But speed should not be the only criterion. Very often a slow-up can happen because a single employee or a group of employees has other drawbacks, while being quite proficient at maintaining the right speed in work flow.

Fear of the work being done, reluctance to work at a specific spot, dislike of fellow workers, dislike of immediate supervisors and scores of other factors can be responsible for a top employee showing undesirable results.

To remove an employee who possesses otherwise top work skills, speeds, and aptitudes is depriving the plant force of a profitable individual. And such people don't exist in sufficient numbers today to be treated lightly.

Cause: lack of essential information—This deficit has often caused stack-ups in even the smallest plants. In almost every instance it has been caused by management's bad planning, and the most prevalent spot is usually the one spot that is most overlooked.

Solution: training—Although this can solve the problem, the cost has often precluded its use. But if you carefully work out a training program, these costs can be kept down. And the good it will do in reducing the number of expensive stack-ups will more than make up for its cost.

Organizing work before assigning it to the individual also helps avoid stack-ups. This procedure applies to all types of work. An extra few minutes spent in organizing any given chore can assure its smooth flow without interruption.

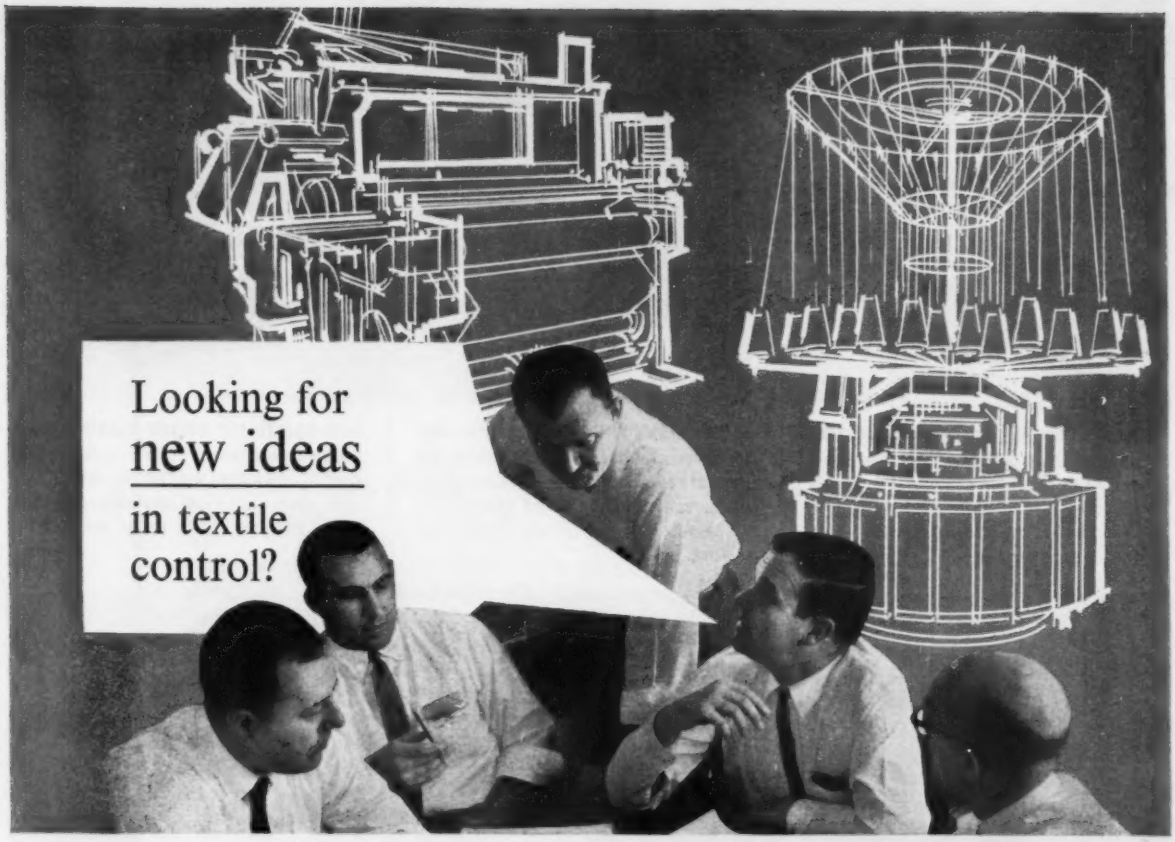
Solution: avoid interruption—This is another good way to stop work stack-ups in the plant. And the supervisor can see to it that things keep moving.

Cause: lack of standards—This is another contributing factor. Where there are no standards of work production there is lax control, and where there is lax control, everyone goes his own merry way. So you're bound to have work stack-ups. And these stack-ups are probably easiest to avoid.

Solution: detailed standards and discipline—Generally over-all standards exist but are inadequate because they are not detailed to fit each specific department in the plant.

Discipline is an essential part of our lives from the cradle to the grave. When it becomes lax we tend to take advantage of the situation. If no set standards exist in a department, and the situation is coupled with lax discipline, work stack-ups are inevitable.

Unequal times required for different parts of the job also cause bottlenecks. In such cases you should closely examine how the roadblock section of the job is being handled. You should then determine whether the system could be revised to cut down this time. In many, many, cases—it can. Again you can shift personnel, which may result in less time needed at a particular job



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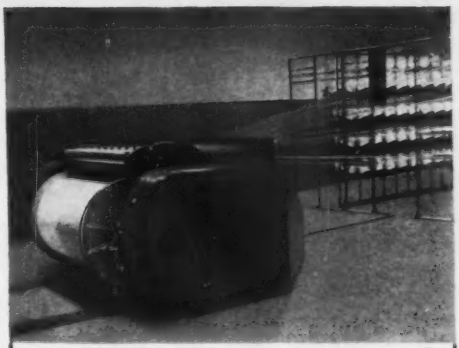

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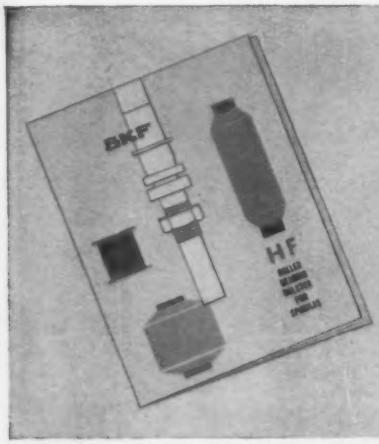

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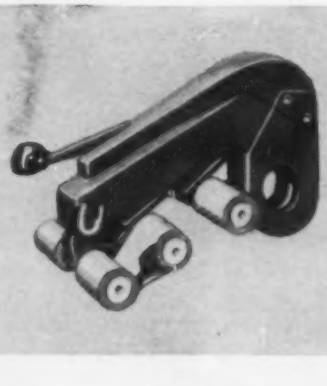

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To answer these questions—and many others—SKF offers a comprehensive booklet on each of its new textile specialties.

These data books are complete. Each contains facts and figures, photos and diagrams of the product's design, features, installation and maintenance.

References like these are indispensable when you're considering new equipment, modernizing machinery or simply replacing worn-out parts. Because with them, you can go right ahead with your plans—with all the pertinent facts on hand. Of course, an SKF textile specialist is always available for consultation.

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Advanced ball and roller bearing technology

Manpower Management

By PAUL A. KING, Labor Relations Counsel, New York City

Arbitrator's Wings Clipped: Refusing to accept an arbitration award reducing an employee discharge for bad carding to a disciplinary suspension, American Thread told its story to the U. S. Court of Appeals at Richmond. This court (with a dissenting opinion) refused to enforce the award. The arbitrator's job was to determine whether just cause for discharge existed. This he had found. In reducing discharge to suspension he had exceeded his authority.

Profit-Sharing: The American Motors-UAW agreement including a plan for workers has renewed employer and union interest in the subject. For a brief review read the 16-p. booklet "What Every Businessman Should Know About Profit-Sharing." Write the Profit-Sharing Research Foundation, 1718 Sherman Avenue, Evanston, Illinois.

Fast-Reading Supervisors: Thirty-four Jefferson Mill people now are faster readers after completing a mill-sponsored reading course. Purpose of course: to help supervisors keep up with books and magazines containing "good information on how to operate a cotton mill in a more efficient way."

Perfect Attendance: To encourage it, Avondale Mills awards certificates. One-hundred and sixteen employees were recently honored. Nineteen had perfect attendance records for two years.

Shorter Work-Week Talk: You hear a lot of it, says the National Office Management Association. But 69% of the companies recently surveyed by the association reported at least a 40-hr. week for clerical workers.

Chip-In Watchman: One watchman protecting two plants for two different employers is not an independent contractor, a federal court holds. He's subject to the minimum wage and overtime provisions of the Fair Labor Standards Act.

One Up for Celanese: Ordered by the Supreme Court to take another look at the Celanese Corp. case, a federal court of appeals did, and concluded that Celanese had every right to refuse to bargain with a just-certified union because of material and deliberate misstatements by the union on election eve.

Safety Payoff: Crystal clear to cost-conscious employers, muddier for workers, is the value of accident prevention campaigns. To sell safety to workers, the National Safety Council has published "The Big Payoff," a 4-color pamphlet. Write the Council at 425 N. Michigan Avenue, Chicago 11, Illinois.

Craft Union Representation for Severed Units: After years of struggle as to who should represent the powerhouse and filter plant workers of Industrial Rayon Co.—the Textile Workers Union, The Independent Virginia Textile Union, or the District 50 United Mine Workers—things seemed to have been settled. District 50 won the election. But IRC refused to bargain with this union. The U. S. Court of Appeals at Richmond upheld the company over objections raised by the National Labor Relations Board (NLRB). The board was inconsistent in applying its rule requiring "traditional" units to represent units severed from production and maintenance groups.

NLRB Okays Election Eve Letter: In it the employer promised that after the election, he'd hold a drawing for a television set for all voters. Letter said its sole purpose was to encourage employees to vote.

. . . *Turn the page*

Manpower Management

. . . Begins on page 123

Keeping a Watchful Eye on Employees: Watching them closely to ascertain their union activities is unlawful. And just plain watching them closely apart from their union activities may also be unlawful, NLRB warned Threads, Inc. That is, if the surveillance occurs when they are reinstated to the payroll pursuant to an NLRB order.

Moving Allowances: What shall they be? As a guidepost, look at what New York State offers its civil service employees (moves must be at least 35 miles away): (1) for any one move, reimbursement to $600; (2) reimbursement for carting household goods and personal effects up to 8,000 pounds; (3) one half the cost of packing and unpacking; (4) necessary storage costs; (5) 8¢ a mile for getting his family there.

Workmen's Compensation: How much can an attorney charge for representing one of your employees? Get the lowdown from Bulletin 220, put out by the Labor Department. Cost: 25¢. You can get it from the Superintendent of Documents, GPO, Washington 25, D. C.

Write What You Mean: In making up employee rules, select your phrases carefully. For example, in writing up a holiday pay rule, don't say "average hourly earnings," when you really mean "straight time earnings." They are not the same. The former has been defined by the Labor Department and other agencies as a worker's total earnings for a specified period including straight time pay, incentive pay, overtime pay, vacation and holiday pay, shift differentials and so on—divided by hours worked.

No Federal Case: Employees have the right to organize under the Taft-Hartley Act and organizers may be able to pass out union literature in company parking lots. But an Illinois Court said it had the power to convict union organizers for refusing to leave a store parking lot where they were passing out leaflets—since the union didn't try to make an NLRB case out of it.

No Union Talk: That is, on company time. An NLRB majority ruled that such a rule presumptively is a valid one—even in face of union organization.

Older Workers: "They have more ability than has generally been recognized:" This is one conclusion reported by Jaunita Kreps, Duke University Professor, on the completion of her survey of the textile, tobacco, and furniture industries in North Carolina. Called "A Case Study of Variables in Retirement Policy," the full report appeared in the June issue of the Labor Department's Monthly Labor Review.

No Employee Committees: Even issuing plans for an employee committee, much less operating one is an unfair labor practice says a federal court. The committee's proposed purpose was to discuss employee welfare.

Synthetic-Textile Earnings: Production workers in these mills averaged $1.51 per hour, straight time pay in August 1960, latest Bureau of Labor Statistics (BLS) survey showed. Earnings topped November 1954 figures (the next most recent BLS survey) by 20%. For a full breakdown by region and job description, see page 620 of the Labor Department's Monthly Labor Review of June 1961.

Reducing Insurance Costs: Don't take "no" for an answer from your insurance companies when you ask if your premium can be reduced. One insurance company executive, a witness before a House Subcommittee looking into welfare costs, admitted to Senator Paul H. Douglas: "The squeaking wheel gets the oil." Only alert and knowledgeable buyers of insurance, or those who can afford to employ competent consultants, are in a position to make certain that their plans provide the highest level of benefits possible for the premium dollar expended.

Straw in the Wind: Looking ahead for new employee benefits to demand, the United Auto Workers suggests income payments to the family of a deceased worker—until the children reach college age.

Greenville Wage Survey: Survey of the Greenville, S. C. area covering office and accounting jobs, draftsmen, industrial nurses, skilled and unskilled workers is available from your local office of the BLS.

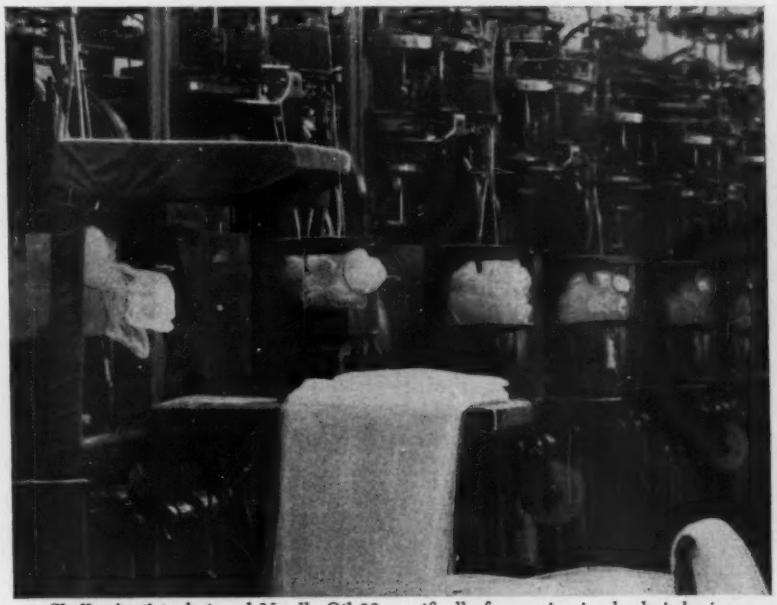
RUST:

Shell Needle Oil 23, with special Shell rust inhibitor, gives outstanding protection against rust during both operating and shutdown periods

Shell Needle Oil 23 was designed specifically for lubricating needles on circular knit hosiery machines.

It provides improved protection against rust. And it helps prevent deposition of nylon size and spin finish.

Here's how Shell Needle Oil 23 can help you cut equipment maintenance costs and increase production in your mill.



Shell scientists designed Needle Oil 23 specifically for use in circular knit hosiery machines like these. It protects needles during both operating and shutdown periods.

PROPER protection of needles from rust is a specific function of the lubricant—during both operating and shutdown periods.

Shell scientists have designed this type of thorough protection into Needle Oil 23 with a special rust inhibitor.

Needle protection assured

Humidity cabinet tests, using several commercial oils, prove that amazing rust-inhibited Shell Needle Oil 23 gives *as much as 200 per cent longer protection against rust than the other needle oils tested.*

It helps to maintain the highly polished surfaces of needles, narrowing points, lace points and carriers during both operating and shutdown periods.

Three more outstanding features

Here are three more outstanding features of this remarkable oil. They can help you cut maintenance costs and increase production in your mill.

1. Excellent scourability. Shell Needle Oil 23 is specially formulated to provide excellent scourability.

It drastically reduces yarn size and spin finish accumulation. This can lengthen the interval between machine cleanings.

2. Excellent stability. Shell Needle Oil 23 virtually eliminates the problems of oxidation, gum formation, metallic soap deposits and sluggish machine starts.

3. Low surface tension. The low surface tension of Shell Needle Oil 23 gives it increased wetting and lubrication properties.

For complete facts on Shell Needle Oil 23, see your Shell Industrial Products Representative. Or write: Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

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What's Happening to Cotton

Cotton varieties are shifting geographically across the country, and cotton properties are changing. Why? Because cotton breeders are out to meet the demands of changing harvest and ginning methods. Here's what you should know about what's going on.

TWO MOVES are afoot in the cotton business. Cotton varieties are shifting geographically. And cotton properties are changing. Two reasons stand behind these changes: (1) increased mechanical harvesting, and (2) modern ginning practices.

Cotton has undergone significant, though not drastic, changes since TEXTILE WORLD published its 1958 Cotton-Fiber table. Cotton breeders have improved fiber properties with new varieties of cotton that make new harvesting and ginning practices less harmful. Their goals are to:

- **Improve** gin cleaning.
- **Produce** early-fruiting, wilt-resistant strains for the Mid-South and Southwest.
- **Adapt** high-yield Mississippi varieties to Far West conditions.
- **Develop** storm-resistant bolls for picker and stripper harvesting in Texas and Oklahoma.

Perhaps more significant are the geographic shifts in cotton varieties. Deltapine is supplanting Acala in the Far West. And two newcomers, Rex and Dixie King, are coming up fast (see Table 1).

Five years ago, the Imperial Valley of California and the Salt River Valley of Arizona specialized in Acala types of cotton. Today, almost 100% of the Imperial Valley and 71% of the Salt River Valley are planted to Deltapine Smooth Leaf.

Reasons: Higher yields per acre, more money for the farmer. What's more, the cotton is easier to clean at the gins, and it's slightly stronger than its predecessor, Deltapine 15.

Another significant change: the increasing acceptance of Rex, one of the few new varieties that has appeared since 1957. Bred at the University of Arkansas, this early-season cotton in 1961 accounted for 32% of the planting in Arkansas, 27% in Missouri, and 9% in Tennessee. Deltapine and Delfos 9169 are giving way to Rex in these areas. Rex is characterized by wilt resistance, good Micronaire values, and fair yarn strength.

Another important development: the trend toward Dixie King in the Southeast. This cotton is wilt resistant, matures early, and has good fiber qualities. Its fiber length and strength produce yarn with a high breaking strength. The cotton's low degree of neppiness accounts for its better-than-average appearance when made into yarn.

In 1957, the four leading varieties in order of importance (% acreage) were Deltapine (31), Acala (21), Coker (12), and Lankhart (9). In 1961, the order is Deltapine (27), Acala (17), Lankhart (12), and Coker (8).

Acala is losing out to Deltapine Smooth Leaf in Arizona and California; Coker to Dixie King and Rex in the Southeast. Lankhart is on the increase in Texas and Oklahoma because of its adaptability to machine stripping.

By F. L. GERDES
Cotton Technologist
USDA, Retired
Leland, Miss.

MORE MACHINE HARVESTING

Over-all machine harvesting has jumped from 30% in 1957 to an estimated 60% this year. In 1960, the Southeast picked about 10% of its crop with machines, compared with 1% in 1957. Percentage in the Mid-South jumped from 15% in 1957 to 40% in 1960; Texas and Oklahoma increased mechanical harvesting from 40 to 60%. The Far West upped its machine picking from 60% in 1957 to 80% in 1960.

Changes in ginning processes accompany this accelerated shift to mechanical harvesting. The most obvious changes since 1927: the sharp trend toward multiple cleaners, and the marked increase in the use of stick- and green-leaf-removing machines.

Gins with two or more lint cleaners climbed from 13% in 1957 to 52% in 1961. The proportion of gins so equipped in 1961 was 30% in the Southeast, 55% in the Central Belt, 56% in Texas and Oklahoma, and 88% in the Far West. Very few gins had stick- and green-leaf-removing machines in 1957. Now at least 17% has this type of equipment—and the trend is still pointing upward.

Growing?

TABLE 1

Here's How Much Acreage is Devoted To Each Cotton Variety–1957-1961

Year	Acala	Coker	Delfos	*Deltapine	Empire	Lankhart	Northern Star	Stone-ville	All Other	Total
1957	21%	12%	4%	31%	5%	9%	2%	3%	12%	100%
1958	25	10	3	26	6	13	3	2	12	100
1959	24	8	5	21	3	15	2	2	19	100
1960	21	8	4	24	4	12	2	3	18	100
1961	17	8	3	27	3	12	6	3	21	100

* Includes Deltapine Smooth Leaf strain; Rex and Dixie King under "All Other."

COTTON VARIETIES are shifting geographically to meet new agricultural practices. Deltapine is supplanting Acala in the Far West. Two newcomers, Rex and Dixie King, account for most of the increased acreage listed under "All Other."

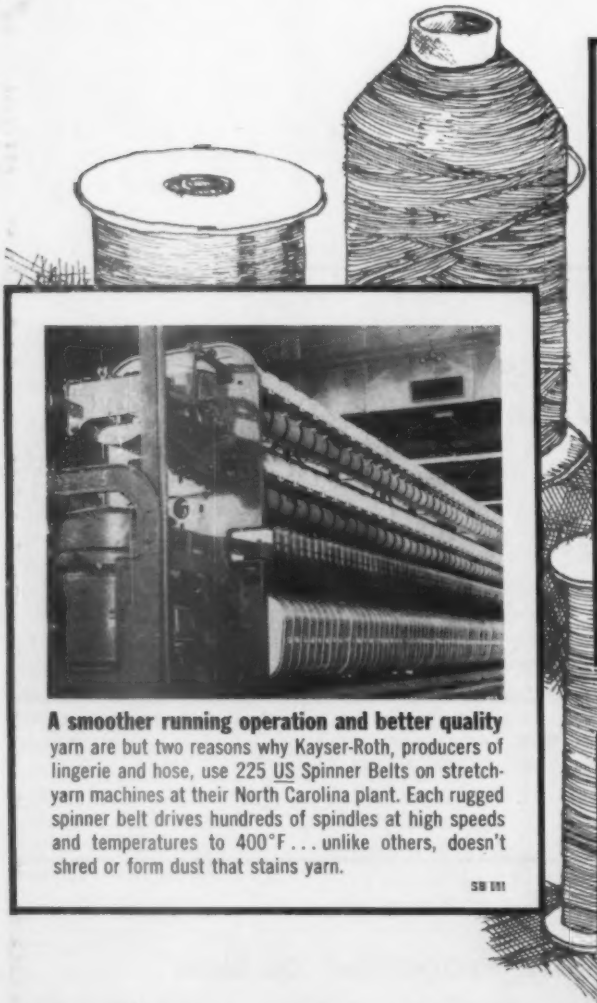
TABLE 2

Here Are the Properties of New Cotton Varieties Developed Since 1957

	Deltapine Smooth Leaf		Rex	Dixie King
Classification	Irrigated	Rain Grown	Rain Grown	Rain Grown
Grade	98	95	94	98
Staple length (1/32 inches)	33.9	33.6	33.6	33.7
Fibrograph length (inches)	1.07	1.06	1.06	1.06
Fibers shorter than ½ inch (%)	10	10	12	5
Micronaire value	4.9	4.8	4.4	4.9
Pressley strength (1,000 psi.)	86	80	80	81
Picker and card waste (%)	7.2	7.4	7.4	7.4
Neps (Per 100 square inches of card web)	20	16	21	14
Yarn-break factor	2,150	2,115	2,000	2,200
Yarn-appearance index	102	102	96	110

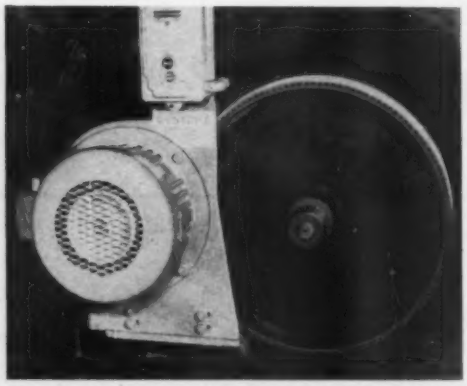
NEW VARIETIES of cotton have improved fiber properties that make mechanical harvesting and modern ginning practices less harmful. Better properties include fiber strength and Micronaire values.

AT THE HEART OF THE TEXTILE INDUSTRY



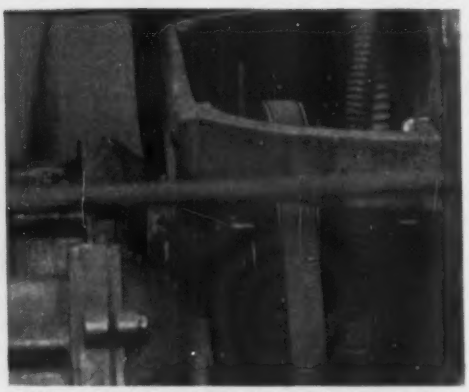
A smoother running operation and better quality yarn are but two reasons why Kayser-Roth, producers of lingerie and hose, use 225 US Spinner Belts on stretch-yarn machines at their North Carolina plant. Each rugged spinner belt drives hundreds of spindles at high speeds and temperatures to 400°F... unlike others, doesn't shred or form dust that stains yarn.

SB 111



The simplest and most efficient individual card drive in existence owes its existence to a U.S. Rubber PowerGrip "Timing"® Belt. Key to Gunter Card Drive's design is the ability of a "Timing" belt to provide a positive, non-slip driving force while running from an extremely small pulley to a large pulley on exceedingly short centers.

TB 104



Driving spinning and spooling equipment at Abney Mills, Greenwood, S. C., U.S. Royal Variable Speed Belts are non-squashing, non-sagging—show no signs of wear after 3 years of torturous service. Here and in textile plants throughout the country, U.S. Variable Speed Belts have consistently outworn and outperformed all other belts.

VSB 103

Wherever the fast-moving textile industry operates . . . you'll find U.S. Rubber products helping it to function more efficiently, more profitably. As the world's largest producer of Industrial Rubber Products, US not only is aware of, but has the products to fill the textile industry's needs.

WORLD'S LARGEST MANUFACTURER
OF INDUSTRIAL RUBBER PRODUCTS

United States Rubber
MECHANICAL GOODS DIVISION
Rockefeller Center, New York 20, N.Y.

What You Can Get Today in . . .

New Maintenance Materials

Looking for ways to cut those high maintenance costs? Here are some of the new materials and application techniques now available to help you push them back.

ATTENTION plant engineers! Here's your chance to help boost your company's profits.

How? By holding maintenance costs in line.

How can you do that? By carefully examining your physical plant and equipment and then making full use of the many new materials and application techniques available.

FLOORS—FIX, FORGET

New advances in mechanical handling have been rough on many factory floors—floors that were not designed to handle new services. And frequently you can't justify complete replacement of the floor with hardened or armored-top floors.

What to do? Now you can use one of several new patching and overlay materials that have been developed in recent years to replace the asphalt- or bitumen-base materials. Here they are:

By KENNETH N. BANTHIN
Plant Engineer
Visking Co. Division
Union Carbide Corp.

(From a paper given at the 12th Plant Maintenance & Engineering Conference.)

1. Latex modified portland cement. You can use this cement for patching or resurfacing over concrete, wood, or steel surfaces. It speeds the job of patching concrete floors by eliminating most of the laborious and costly preparation required for older methods. You'll get a strong surface with enough resilience to endure the pounding of lift trucks, the sliding of pallets, and the wear of traffic.

You won't have to remove any of the old floor where grade does not have to be maintained. But if grade must be maintained, you can chip out ¼ to ½ inch for a clean, sound base. You can readily apply a layer of ⅛ to ½ inch and bring it to a feather-edge contact.

2. Neoprene latex-base overlay. This material provides an economical method for repair or installation of wash and shower rooms in existing buildings. The overlay is adaptable to wood or deteriorated concrete floors, where you need a smooth, nonslippery, watertight covering. The floor also is highly resistant to caustic. To use this material, apply a reinforcement of hardware cloth and fasten it to the old wood or concrete surface. Then spread and work together alternate layers of neoprene-base overlay and burlap. You can lay the material from ¼ to 1 inch or more in thickness.

3. Epoxy surfaces. Epoxy surfacing and patching materials today are fast becoming the standard where chemical resistance from abrasion, wear, and impact is required. Both protect new surfaces and repair corroded ones without requiring costly contracting jobs or long shutdowns. And you can add pigments to achieve decorative effects or to match the color of your concrete.

Apply the material over any sound, clean, dry surface by hand trowels or by new spray equipment. You must use the material reasonably fast because one batch in a 5-gal. pail at 70 to 75 F. has a working life of only 60 to 90 minutes.

A layer $\frac{1}{16}$ to ¼ inch thick is most economical. When you apply it over steel plates or worn stair treads, it provides an ideal nonslippery surface.

The epoxy material generates heat by an exothermic reaction of the ingredients. This action sets the coating compound. Curing time is

8 to 12 hours, after which you can use the surface. Where you need a layer over ¼ inch, you had better use a filler or underlay of cement.

OLD WALLS MADE NEW

You can fix masonry walls with many new materials including spalled and disintegrated concrete, caulking for steel sashes, and sealers for waterproofing surfaces:

1. Concrete adhesive. Liquid polysulfide polymer is a synthetic elastomer that cures to a flexible solid without shrinking. This makes it an excellent permanent flexibilizer for epoxy resins—synthetic polymers that do not shrink when cured to a brittle plastic. A combination of the two produces a strong, flexible nonshrinking concrete adhesive. When you apply this adhesive over properly cleaned old concrete, it creates a bond between new and old that's stronger than the portland cement itself.

2. Caulking. Caulking materials compounded with butyl and other synthetic elastomers remain elastic and weather resistant longer than the older oleoresinous materials. Thus they make effective seals and good protectors for the sash.

3. Sealers. Mixtures of 3 to 8% of silicones in mineral solvent provide a material that's brushed or sprayed on outside walls to keep out water. Because silicones have low surface tension, they penetrate deep into the surface away from the face of the wall and thus protect the face against dirt and rain.

Coatings produced by the addition of acrylic resins to water or latex-base vehicles are used for concrete, cinderblock, stucco, and masonry surfaces. For some of the texture-type materials you need only one coat to produce a sand-like surface that actually "breathes" and allows vapor in the wall to pass through the film. At the same time, the coating keeps out moisture. You can apply the materials by brush or spray. One coat usually protects the surface.

CUTTING WINDOW COSTS

Window modernization with new materials can give your old buildings new life and simplify their maintenance in the future. Here are some of the new materials:

1. Polyester glass fibers. One of the most versatile replacements for glass is the translucent panel formed by soaking a dense blanket of glass fibers in liquid polyester resin. The glass fiber and resin are then cured in a form or mold to yield strong translucent sheets in flat or corrugated form.

Depending on the condition of the sash, replacement with polyester glass fibers is more economical under these general conditions:

- Minor window-light replacement in a good sash. Replace with $\frac{1}{16}$-in. flat glass-fiber sheet and nonhardening putty.
- Major fixed-sash repair. Remove the old sash and install a new wood, steel, or aluminum frame to support flat or corrugated glass-fiber sheet.
- Major movable-sash repair. Remove old glass and attach flat glass-fiber sheet to outside of movable sash, or remove the entire sash and install sliding, overlapping, flat, or corrugated glass-fiber sheets in aluminum or stainless-steel channels. When it's possible, use the old sash and install the flat plastic sheet on the outside to protect the sash from further weathering and to eliminate exterior painting. Polyester glass-fiber glazing offers these saving factors:
- Sheets do not crack or craze when they're subjected to impact several times greater than normal.
- Sheets transmit diffused light that eliminates shadows.
- Colors make painting unnecessary. Because dirt doesn't show, you don't have to clean your windows as often.
- Sheets are safe—there's no hazard from broken fragments.
- You can cut the sheets easily with ordinary shop tools. In slide-lighting installations, corrugated sheets fit right over metal or asbestos side walls.
- Fire-resistant sheets with underwriter's label are available for special conditions.

2. Acrylics. In plants where glass breakage is frequent and transparency must be retained, acrylic sheets provide an economical substitute for glass. Glazing costs about 20% higher when ⅛-in. acrylic sheet is used in place of double-strength glass. The sheet is resistant to considerable impact, twisting, and shock.

To prevent scratching the sheet during installation, leave the protective adhesive paper on both sides through all preliminary handling, sawing, and shaping. Remove the paper just before you install it in the sash. You must not fit acrylic sheet tightly in the sash since space must be provided for expansion. Use a nonhardening putty to set the plastic sheet.

3. Glass block. Steel sash in plants with high humidity are subject to severe corrosion and deterioration. Often you'll find it more economical to replace the entire window with glass block or a combination of glass block and aluminum ribbon sash.

Mortar the glass block into a permanent setting. Fill and point the spaces of the interior side with an epoxy-base filler. This smooth surface is easy to clean, impervious to moisture, and pleasing in appearance. What's more, it eliminates maintenance expenditures for washing, repairing, and painting.

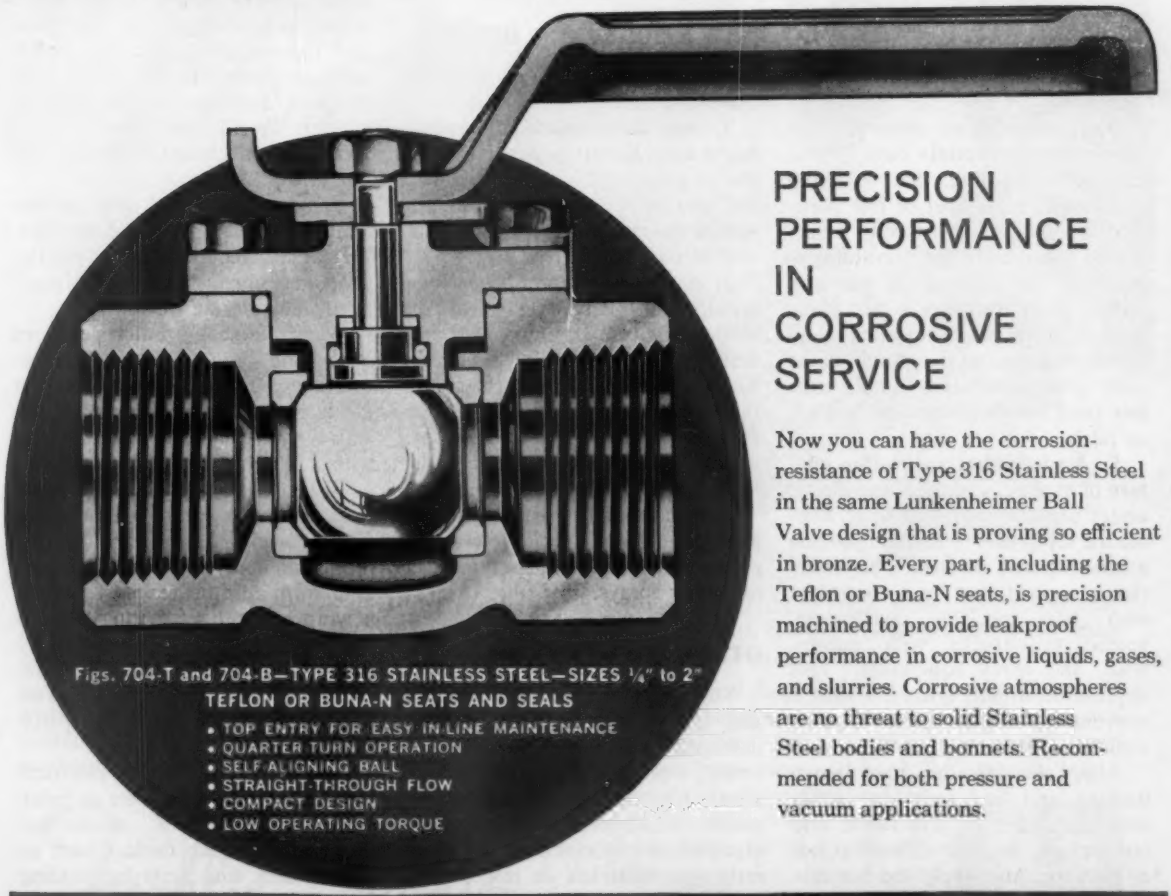
4. Plastic domes. You can use transparent acrylic plastic domes to replace leaky and deteriorated skylights. Square or rectangular sizes are available. You can install these domes readily in any new roof where you need daylight.

BETTER, CHEAPER ROOFS

Newer materials available for roofs are:

1. Glass-fiber fabric with tear strength far greater than felt for

NEW LUNKENHEIMER STAINLESS STEEL BALL VALVE



Figs. 704-T and 704-B—TYPE 316 STAINLESS STEEL—SIZES ¼" to 2"
TEFLON OR BUNA-N SEATS AND SEALS

- TOP ENTRY FOR EASY IN-LINE MAINTENANCE
- QUARTER TURN OPERATION
- SELF-ALIGNING BALL
- STRAIGHT-THROUGH FLOW
- COMPACT DESIGN
- LOW OPERATING TORQUE

PRECISION PERFORMANCE IN CORROSIVE SERVICE

Now you can have the corrosion-resistance of Type 316 Stainless Steel in the same Lunkenheimer Ball Valve design that is proving so efficient in bronze. Every part, including the Teflon or Buna-N seats, is precision machined to provide leakproof performance in corrosive liquids, gases, and slurries. Corrosive atmospheres are no threat to solid Stainless Steel bodies and bonnets. Recommended for both pressure and vacuum applications.

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THE ONE Great NAME IN VALVES
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flashing or patching material to be used with asphalt, pitch, or other binders.

2. Plastic screen fabric for reinforcement of glass fiber or felt for flashing points of mechanical movement such as expansion joints.

3. Plastic elastomer flashing for hard-to-hold places such as around sheet metal or plastic ducts.

4. Special cold-application mixtures and blends of asphalt, synthetic rubber, silicones, and plastic. You can use these materials on a cleaned roof to resaturate the top layers of felt and to provide a new surface exposed to the elements. Replace clean gravel as often as is necessary.

Plant maintenance employees can apply these materials easily. You can patch flashing, bad spots, or cracks with glass-fiber or jute fabric and apply a cold mastic binder before you use the resaturating material. On large areas, you can reduce costs by using a pump and hose to move the resaturating material from drums on the ground to the roof. This application usually costs less than hot-mopping with asphalt or pitch.

5. A special hot application mixture of asphalt, silicones, and plastic under pressure and heat to resaturate the top layers of felt and provide a new exposed surface. This material is applied best by a contractor who has specially constructed, heated tank-trucks with pumps, hose, and spray equipment. This application usually costs less than a conventional single-felt cap-sheet installation would cost.

After cleaning the roof, patch flashing and bad spots or cracks with glass-fiber or jute fabric and hot asphalt. Replace cleaned gravel as desired. And apply the hot mix at about 250 F. with 0.5 to 0.9 gallon of mix per square yard of roof surface. You can get heavier build-ups by multiple passes.

6. Sprayed asphalt and chopped glass-fiber roving are applied directly on a new deck or over old roofing. In this application, the asphalt emulsion is stabilized with a mineral (clay) colloid for protection against degradation and blistering. You can easily cover flashing. It leaves the roof tight, but with enough elasticity to take care of expansion and contraction.

For surface repairs, patch with a trowel. A crew of three men can roof 15,000 to 18,000 square feet a day with this material in contrast to five men needed to put down 8,000 square feet of conventional multilayer roofing.

NEW INSULATIONS HELP

You can also get new insulating materials:

1. An aluminum-filled asphalt-based coating that you can apply to the cleaned roof surface to reflect the rays of the sun. This material lowers the temperature of the under side of the roof 8 F.

2. A thin aluminum sheet you can apply with a suitable hot or cold binder to cleaned nongraveled roof surfaces that reflect the sun's rays. This application is more desirable than the aluminum-filled asphalt-base coatings but you'll need considerably more skill for proper installation of the aluminum sheet.

3. Modern lightweight aluminum pipe systems and special low-water-capacity stainless-steel spray nozzles for water sprays.

OTHER COST CUTTERS

You can improve maintenance and reduce cost by using entirely new products or extended use of some existing products. Epoxy plastic formulations are a good example. These versatile maintenance materials are available in the plain resin-type materials or mixed with special powdered stainless steel, aluminum, or lead.

You can get these epoxy materials in various size containers from small squeeze tubes to 25-lb. cans. Most economical: 1- to 4-lb. cans.

With a plastic pack unit, you can mix small quantities of resin and curing agent without exposing them to air or skin. The resin is in a sturdy clear-plastic pad, and the curing agent is in an attached collapsible tube. When using the material, simply inject the curing agent into the resin and then work it into a uniformly mixed mass.

When you mix these components properly and apply them on clean dry surfaces, you can use them for many mainteance jobs in the mill. For example:

Machine repairs: To prevent nuts from coming loose from shafts where lock washers fail. To fill in and tighten loose gear and pulley hubs on shafts. To fill in and hold in place bearings in end bells of motors. To fill blow holes or holes incorrectly machined in ferrous and nonferrous castings.

Tank repairs: To seal around rivets on tanks instead of welding. To patch defective spots in plastic-lined steel chemical tanks and steel-lined reaction tanks.

Water lines: To patch leaks in water and process lines. This repair is especially good, and you can do it in five steps. 1. Cover the leak with a small pad held in place with a steel strap. 2. Wrap a layer of spacer screen around the plug to serve as a porous framework for the resin. 3. Install an injection fitting and apply vinyl electrical tape as a form for the resin. 4. Apply a wrap of cloth restricting tape to confine the resin. 5. Force the epoxy resin into the tape mold with a hand gun at approximately 100 psi. You can use the line after the patch hardens for about 2 hours.

General uses: To set electrical junction boxes on concrete or brick walls in place of mechanical anchors. To make devices such as jigs, fixtures, and nests for holding irregularly shaped parts.

Other effective new materials are plastic films, plastic rope, seal-less pumps, many types of seals, identification markers, self-sticking color tapes, weed killers, exhaust systems for corrosive fumes, and topping for grounds.

Franklin Colorbred Yarns

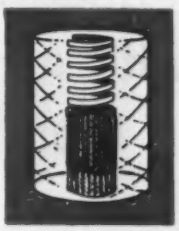
Trade Mark

Just as Franklin Colorbred Yarns prove their quality by delivering properly at the knitting machine, or in warping or winding, and by standing up to the finishing operation, so do they prove their quality to the retail buyer in many ways:—shades in step with fashion trends, uniform dyeing and even superior "hand" in some cases.

If you would like to know more about shades that are in step with fashion trends, ask us for our latest seasonal color card.

In case you don't know why Franklin Colorbred Yarns are uniform in shade, it's because of the Franklin Compressible Spring Package. Soft packages compress more and hard packages less into a column of uniform density. Uniform penetration of dye liquor and uniform shades consistently follow.

If you would like to know more about superior "hand", ask us for the story on FLUFDYED Hi-Bulk Orlon (Dupont's acrylic fiber).



X-ray view of Franklin Package—the "secret" of uniform shades. Don't say "package dyed". Say . . . "FRANKLIN COLORBRED"

*Fashion-Right and Quality Controlled

Franklin Process

COMPANY

Largest Package Dyers in the World of Natural and Synthetic Fiber Spun Yarns for More than Half a Century

DIVISION OF INDIAN HEAD MILLS, INC.

Plants at—

Greenville, S. C. Chattanooga, Tenn. Fingerville, S. C. Executive and Sales Offices at 1457 Broadway, New York, N. Y. Additional Sales Offices at Greenville, Chattanooga, Philadelphia (301 Swede St., Room 506 Norristown, Pa.) and Providence (1045 Warwick Ave., Warwick, R. I.)

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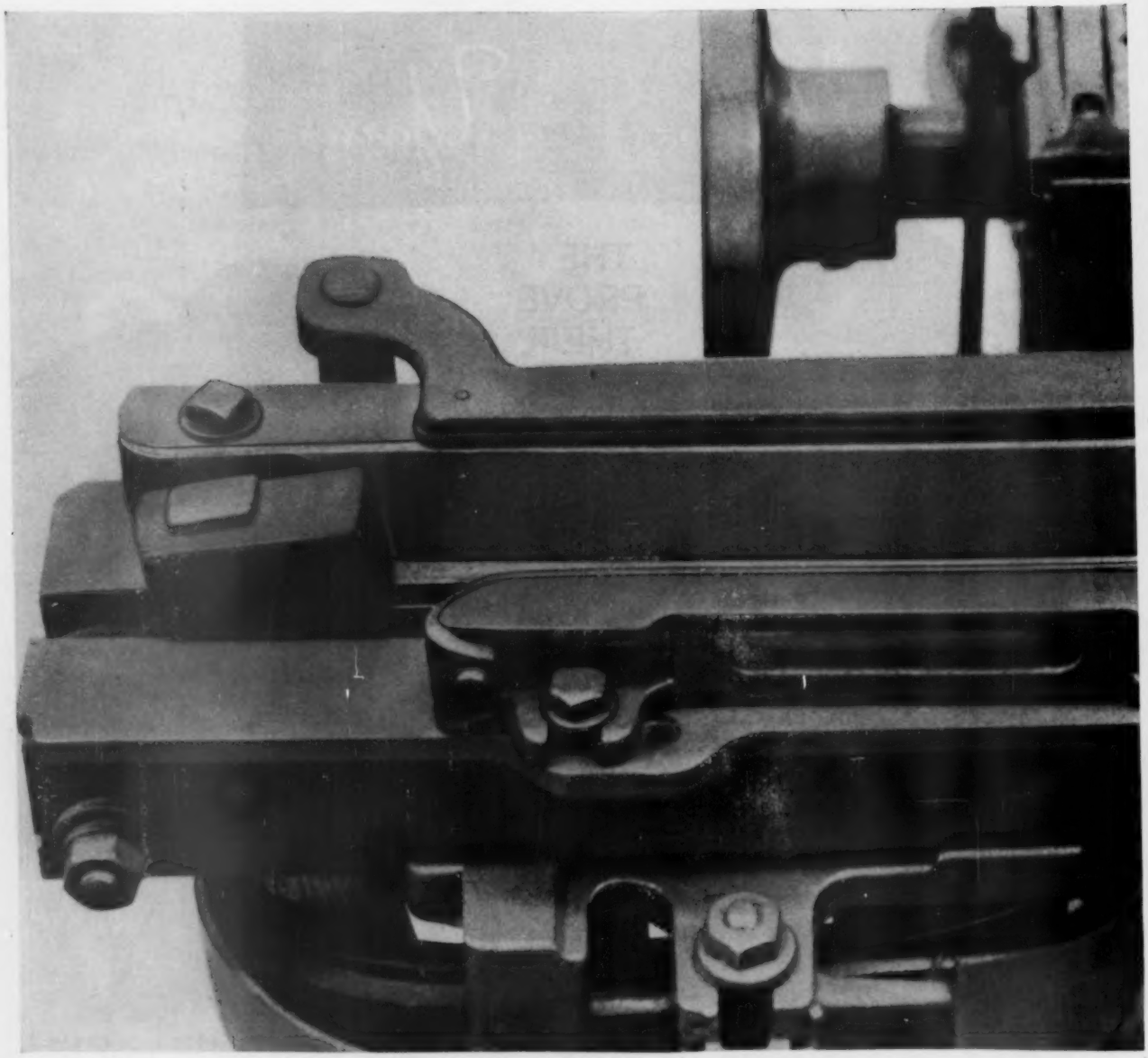


CN-889 is a tough, dimensionally stable fiber material, unaffected by changes in temperature and humidity. It requires less break-in, less resetting, less frequent replacement—and thus adds productive hours to your looms.

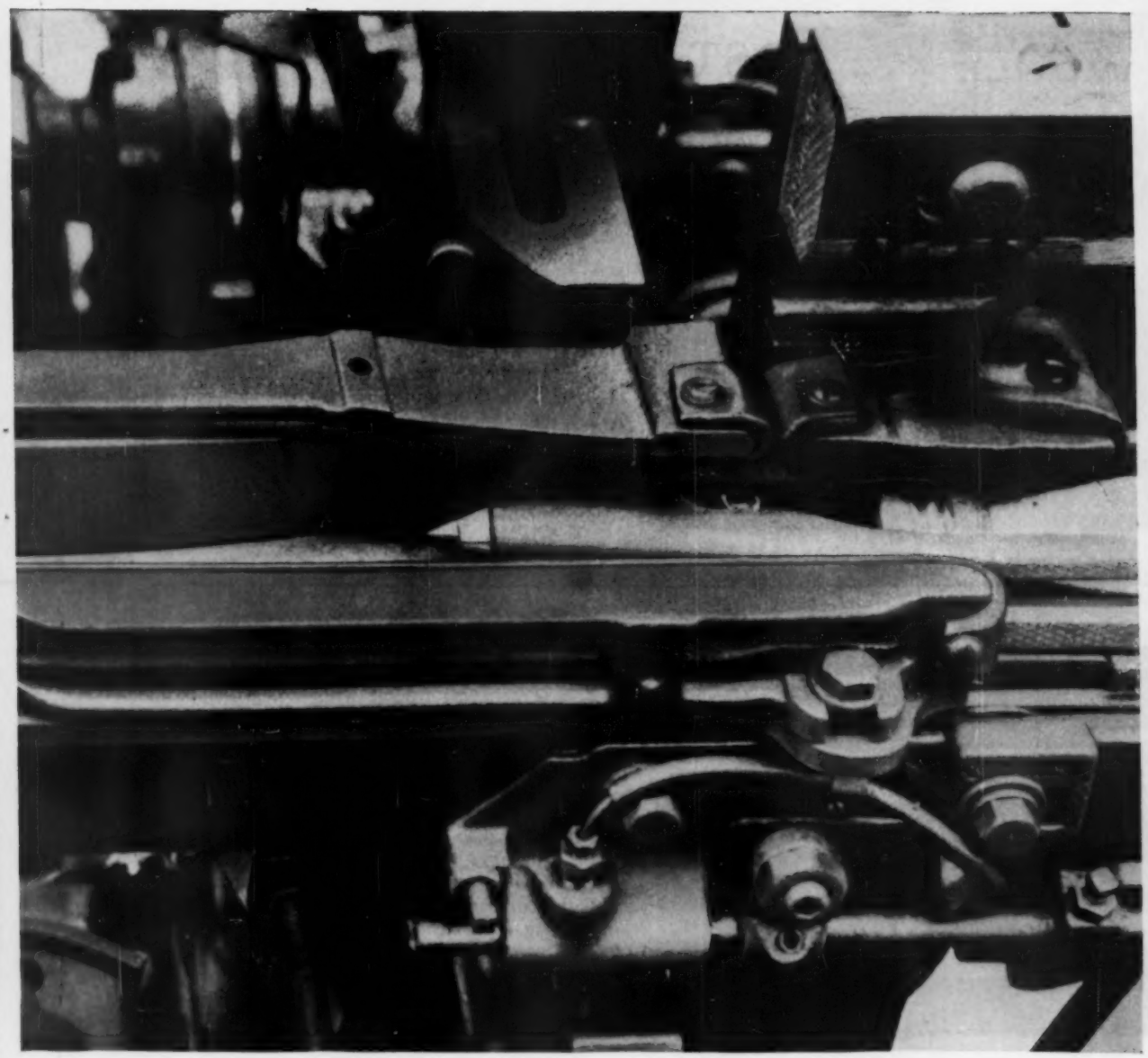
Reduce costly downtime with Armstrong CN-889 loom binder covering

CN-889, a new Armstrong-developed synthetic covering for loom binders and box fronts, can reduce costly downtime on your looms.

CN-889 is inherently stable, so it's unaffected by variations in temperature and humidity that can impair the performance of other coverings.

As a result, CN-889 requires less break-in time and less resetting. And it outwears natural materials even on looms where heavy plastic shuttles are used.

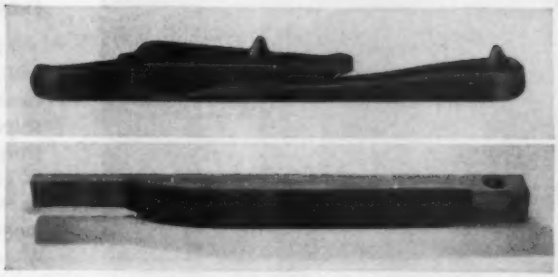
This means fewer shutdowns for adjustment



and replacement of binder and box front coverings . . . and more productive hours for your looms.

CN-889 gives you all these operating advantages, yet it costs no more than other loom binder materials. Why not arrange to test this new material right away? Prove on your own looms how well it works.

Your Armstrong man will be glad to help arrange a test. Call him or write to Armstrong Cork Company, Industrial Division, 6911 Dauphin Street, Lancaster, Pennsylvania.



Armstrong
LOOM SUPPLIES

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 135

TEXTILE WORLD . . . COST CUTTERS

Magnets Eliminate Clip Damage

Clips used for taking out double edges often turn up in print machines, pads, and calenders. And they cause costly repairs.

At today's high drying speeds, the operator on the delivery end of a drying range finds it almost impossible to catch and remove every clip.

In the photo, you see a pair of powerful magnets mounted near the selvage of goods being dried before they are to be printed. The magnets (Guider Roll & Service Co.) yank out any clips that may have been put in the goods entering the drying range.

Savings? Hard to figure except that one clip in a pad nip, a print roller, or calender can cost $500 and up, according to how much of the goods are affected before the damage is seen.

Splice Doubles Tape Life

If you're having trouble with broken composition-type card tapes, take a look at this new splice developed by Faribault (Minn.) Woolen Mill Co. It has a 250-lb. breaking strength, compared with 72 pounds for the conventional hook splice. So far, the spliced tapes have been running over 6 months without loosening.

A tape used to break every 2 or 3 days, with each break causing 1 to 2 hours downtime for the card. Tape life was greatly shortened and each new tape cost the company about $160. David Klatt, overseer of carding, estimates that tapes spliced this way will last twice as long as they formerly did.

To make the splice, peel back the outer layers, insert conventional hooks through the remaining plies, and glue down the outside layers with an epoxy resin.

Bins Use 100% Warehouse Space

Metal bins for storing open-stock goods let Dan River Mill, Inc., Danville, Va., use all of its warehouse space clear up to the ceiling. The residue of each order after shipment is put into these bins. If possible, Dan River stores a minimum of 1,500 yards of each major style of goods.

Boxed goods to be stored for later shipment are moved up on an inclined conveyor to another area where they're also put into other tiered racks in sequence by section number and rack number.

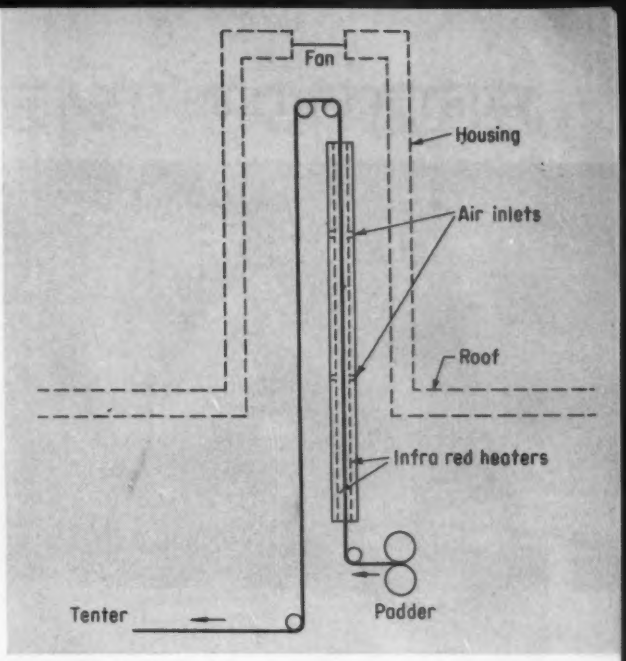
The operator locates goods to be shipped by a master sheet and pulls them from the racks with electric fork trucks. A linking conveyor system carries them to the shipping department where they are checked, assembled, and loaded on motor trucks or boxcars.

Predryer Ups Pad Dyeing by 10 YPM.

By putting an infrared predryer into its pad dyeing range, Northern Dyeing Corp., Washington, N. J., has speeded its continuous dyeing and drying by 10 ypm. Result: Over-all power cost of drying cut 10%.

A tower built above the roof of the company's 8-ft. building holds the infrared heaters (Corning Glass Works–Pyrex). And there's a fan in the top of the tower for removal of moisture-laden air. The predryer removes 50% of the moisture from the fabric.

Northern arranged the heaters in two vertical banks with the heating surfaces facing each other (fabric passes between banks). For flexibility each bank has two rows of 24-in.-wide units in the center and a row of 6-in.-wide heaters on each side. Therefore only the two center rows are used for 45-in. fabrics.



Eliminates Seconds Due to Grease

You can cut seconds due to grease spots right down to nothing by using a method developed by Synthetics Finishing Co., Philadelphia, Pa.

The problem: Hand-spot washing often didn't remove stubborn spots, so some pieces were degraded.

Solution: A high-pressure, Model 18 spray gun (Binks Mfg. Co.) connected to the compressed air line and a drum of perchloroethylene. The operator places a blotter under the grease spot, shoots solvent into the spot, then compressed air to dry out the entrained solvent. A two-position trigger simplifies the operation. Results: no more spot, no solvent rings—therefore, no more seconds.

Secret of success: 130 to 140 pounds of air pressure used in the spray gun.

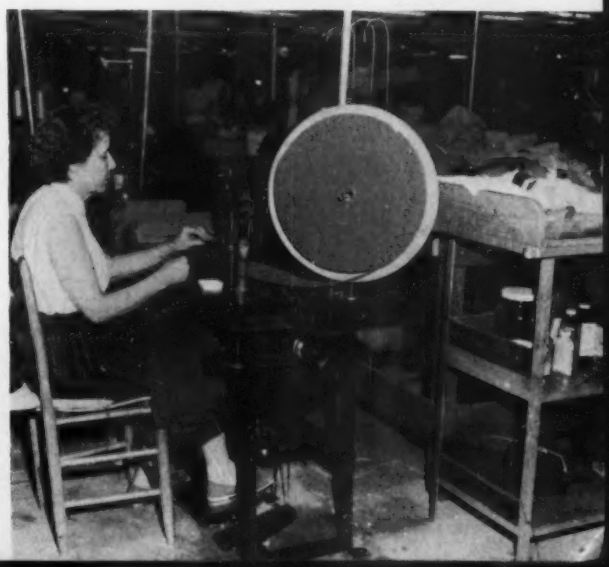
Sweater-Border Production Up 200%

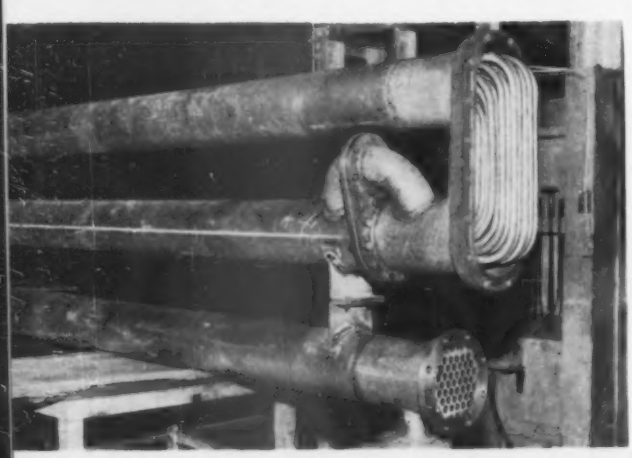
A device to feed knit-goods borders to machines that attach trim to cardigan sweaters increased production 200% per machine recently at Herbert Mills Co., Inc., Marion, S. C. The border-feeding device fits any sewing-machine model.

As the border fabric is knitted, it is wound on a stainless-steel-tubing core at the knitting machine. Fabric knitted 1¾ or 2 inches wide is doffed in rolls 18 inches in diameter, 125 feet long.

The device is made from two plywood disks, 20 inches in diameter. Two rolls of border fabrics are placed between and beside the disks and are held to the sewing machine by a pin on a stand. Two rods tension the fabric. Two rolls of fabric trim 8-doz. cardigan sweaters.

. . . Turn the page





Saves 28,000 Pounds of Steam Per Hour

A Southern print works that has modern bleaching, mercerizing, and washing equipment is realizing a nice dividend from reclaimed heat once thrown away in over a million gallons of hot water each day.

The heat exchanger, similar to that shown (Old Dominion Iron & Steel Co.), is tucked away in waste space and requires little or no servicing. Four 14-ft. stainless-steel shells and 13,520 lineal feet of stainless-steel tubing make up the primary unit.

The tubes handle 750 gpm. of waste hot water which comes in at 150 F., leaves at 83 F.

Fresh water (50 F.) comes through the shells at 632 gpm. It picks up 80 F. of heat to leave at 130 F.

Average savings for the company—28,000 pounds of steam per hour.

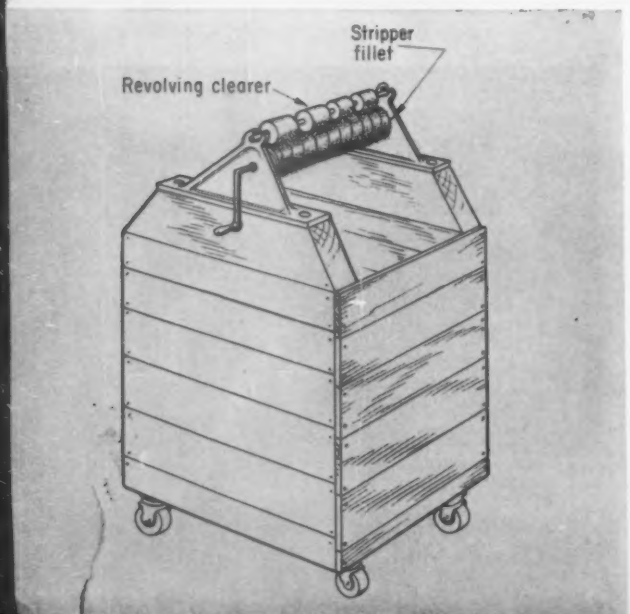
Welder Cuts Machine Downtime 50%

A 200-amp. portable electric welder at Albany Felt Co., Albany, N. Y., is cutting production-machine downtime 50% for all machines that require major welding jobs. The welder (Lincoln) is moved right to the mill area where the broken machine is.

Reason for the reduced downtime? A machine doesn't have to be torn down and taken to the shop for oxyacetylene welding—instead, the portable welder is brought to the machine.

What's more, the electric welder can be used for overhead work and other places that are difficult to reach. Another big advantage: It welds stainless steel.

An oxyacetylene torch is still used to weld cast iron and steel for simple heat treating and cutting metal parts.



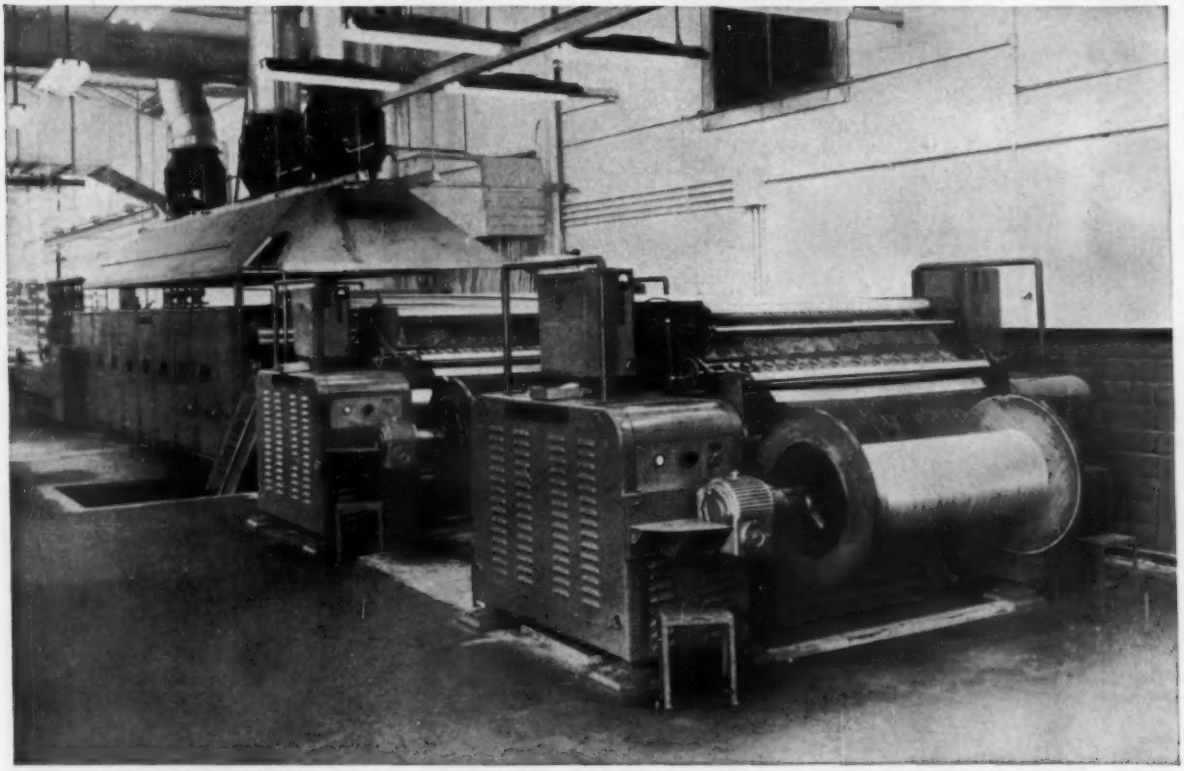
Device Cuts Cleaning Time 83%

Spinners at Highland Park Mfg. Co., Charlotte, N. C., are now cleaning clearers from one side of a spinning frame in less than 20 minutes. Before obtaining the cleaners, they spent more than 2 hours completing the cleaning job by hand.

The mill developed a clearer cleaner (shown in sketch) to speed up the operation. The basic mechanism is a small roller with stripper fillet mounted on it. A crank turns the roller and the fillet revolves against the clearer. A rack over the roller holds the clearer so that it rests lightly on the stripper fillet. The clearer removes lint quickly and does not damage the clearer cloth.

The company cleans the clearer rolls for a complete spinning frame in less than 40 minutes with a hand-operated unit. But if you motorize the cleaner you can make the operation even faster.

ANOTHER RECENT COCKER GH SLASHER INSTALLATION



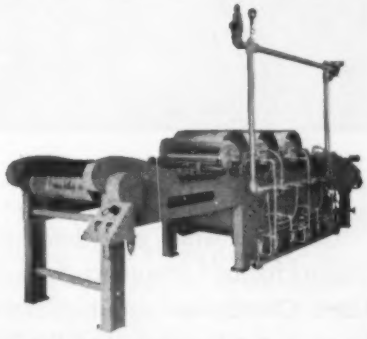
17 Cylinder Tire Cord Slasher

This tire cord slasher demonstrates Cocker's ability to engineer and build superb slashers for any type yarn and for any application. This extra heavy duty machine was designed to stretch heavy denier yarns up to 15%. It has 17 dry cans and 4 section beam take-up units and is fed from a Cocker magazine cone creel to provide continuous operation. Speeds up to 170 YPM.

All Cocker Slashers have valuable features not found on any other sizing equipment. Cocker's simple and efficient Torque Tube Drive*, individually removable cylinders, timing belt drive, air motor loading of size box top rolls, and many other exclusive Cocker features bring you "TOMORROW'S SLASHING TODAY".

We will be glad to send you our new illustrated catalog.

*Pat. Pending



Cocker Laboratory Slashers duplicate mill slashing operations.

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:	IN MEXICO:	PLANT & OFFICES	WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT
Contact W. S. Clark Montreal, Canada Oxford 7-2242	Ing. J. Via, Jr. I. La Catolica 45-911 Mexico, D. F.	at Ranlo, N. C. MAILING ADDRESS: Gastonia, N. C.	

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 139

In clover

...Once in a while, everything clicks. You style your line just right, price it right, sell it right, and—wow! Doesn't happen often enough, but it happens. Well, one thing that can help it happen is the right choice of fibers. Choose Du Pont fibers and you're investing in the best known, most trusted and preferred man-made fibers in the business. And Du Pont keeps bolstering that preference through a vigorous advertising program on network TV and radio, in magazines and newspapers... Feature Du Pont fiber trademarks on your labels, in your advertising and in your selling plans. It pays!

GET A SELLING EDGE WITH DU PONT NYLON "ORLON"* ACRYLIC FIBER "DACRON" POLYESTER FIBER**

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY DU PONT

*Du Pont's registered trademark for its acrylic fiber. **Du Pont's registered trademark for its polyester fiber.

What's New This Month in . . .

Fibers, Yarns, and Fabrics

By NOREEN HEIMBOLD, Editorial Assistant, TEXTILE WORLD

Fibers for Nonwoven

New non-wovens—they're the result of Du Pont's experiments with a series of products known as "spunbonded" materials. Produced through integration with synthetic-fiber manufacturing, the new structures are made from fiber-forming polymeric materials.

Some of the products will be used initially as interlinings, others as base materials for cooling and impregnation. Tests are underway to determine further potential.

Packing the Pumps

Now you can get an improved Teflon fiber for braided packing for pumps and valves. Carbon is removed by bleaching, which reduces the packings' tendency to "burn." Preshrinking of the yarn before braiding results in greater dimensional stability at high temperatures.

Cost: $18 per pound, 400 denier; $14 per pound, 13,500 denier.

Knits Go Double

Union Carbide Chemicals Co. has developed a practical way to produce double-faced pile fabrics for reversible knitted outerwear.

By a brushing technique, the fibers are pulled through the back of a conventional sliver-knit single-face pile. The Dynel backing is subjected to controlled heating, which shrinks the backing and locks the pile fibers in place.

New Product Packaged

Dawbarn Brothers, Inc. has introduced a new product in a new package. The product, DLP-57, is used for outdoor furniture webbing weavers and chair manufacturers. Its tensile strength is increased by 15 to 20% over DLP-51.

The package, called a Beamette, contains eight ends. Since all packages will run out at the same time, yardage control is absolute.

Creslan Ups Whiteness

Ready now: Creslan in a new whiter version for knitting. Called Type 61, the fiber is nonacid-dyeable. When combined with the older Type 58 acid-dyeable fiber, it achieves two-tone effects.

Type 61 is designed for the sportswear and sweater fields. When commercial production begins in 1962, it will be available in tow and staple form only.

Stretch Decreased

There's a new method for manufacturing nylon tricot. Developed by Collins & Aikman, it's designed to decrease the fabric's stretch. The yarn is stabilized through a new way of knitting.

Weldon, a leading brand-name manufacturer, is using the fabric in men's pajamas.

Tiling With Carpet

Thermo Bond Carpet Corp. has come out with a kit of Magic Carpet Tiles.

The squares, sponge-rubber backed and surfaced with rayon, are bonded to floors. Just coat backs with the activator and press to a clean surface. Soiled tiles can be peeled off, washed and dryed, and replaced with another activator application. After three washings a coating of a special adhesive will restore the bonding quality.

Available in 6, 9, 12, 15, and 18-in. squares, kit retails for $14.95. It's equivalent to 2 square yards of tiles. There's a choice of five patterns and eleven colors.

NEWS BRIEFS . . .

Gamma-ray grafts—Atomic Energy of Canada Ltd. has grafted man-made fabrics together by bombardment with gamma rays. Results: increased strength and water resistance for the fabric.

Patterned socks—Dacron and combed-cotton socks now boast fancy patterns in color because of a new colored yarn, called Four Seasons, developed by J. P. Stevens.

First choice—Carter Brothers Inc. has chosen Caprolan as the sole fiber for its new program of carpet-roll goods to be sold at retail stores.

Boat cover—Lightweight vinyl "laminated" nylon cover protects boats during repair jobs. Herculite Protective Fabrics developed the cover, which eliminates the need for padding.

Polyurethane pillows—A car pillow with polyurethane as filler is part of the fall terry-cloth lines of Whiffing-Hiatt Enterprises. The pillows are attached by rubber suction cups to the side windows of autos, trains, or buses.

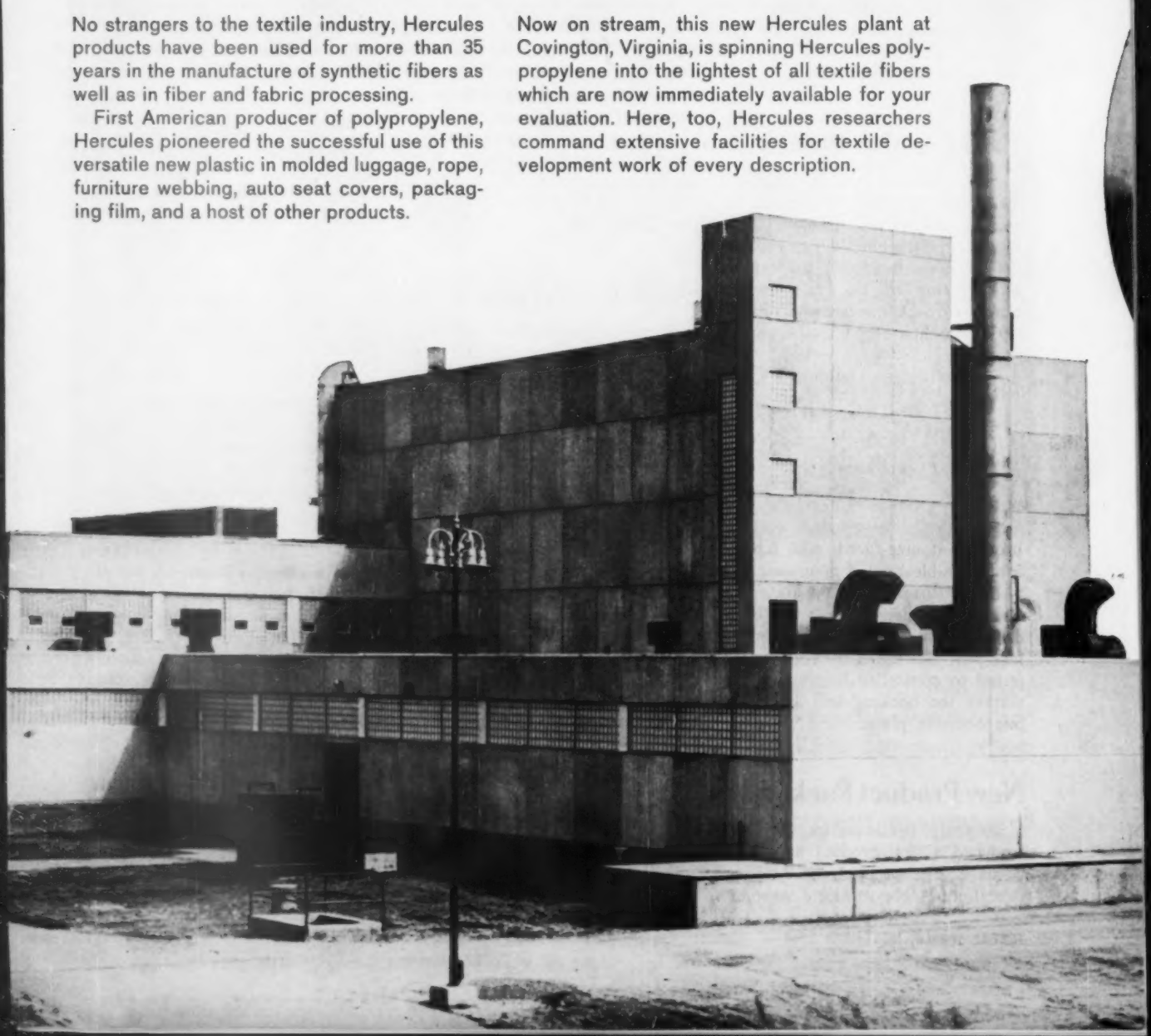
New fillers—Sample quantities of a new pillow-filling material are on the market. It's Dacron 99. It has resilience, resistance to mildew, whiteness, nonallergenic properties, and freedom from odors. Price: $1.34 per pound.

WAY OUT FRONT... HERCULES®

No strangers to the textile industry, Hercules products have been used for more than 35 years in the manufacture of synthetic fibers as well as in fiber and fabric processing.

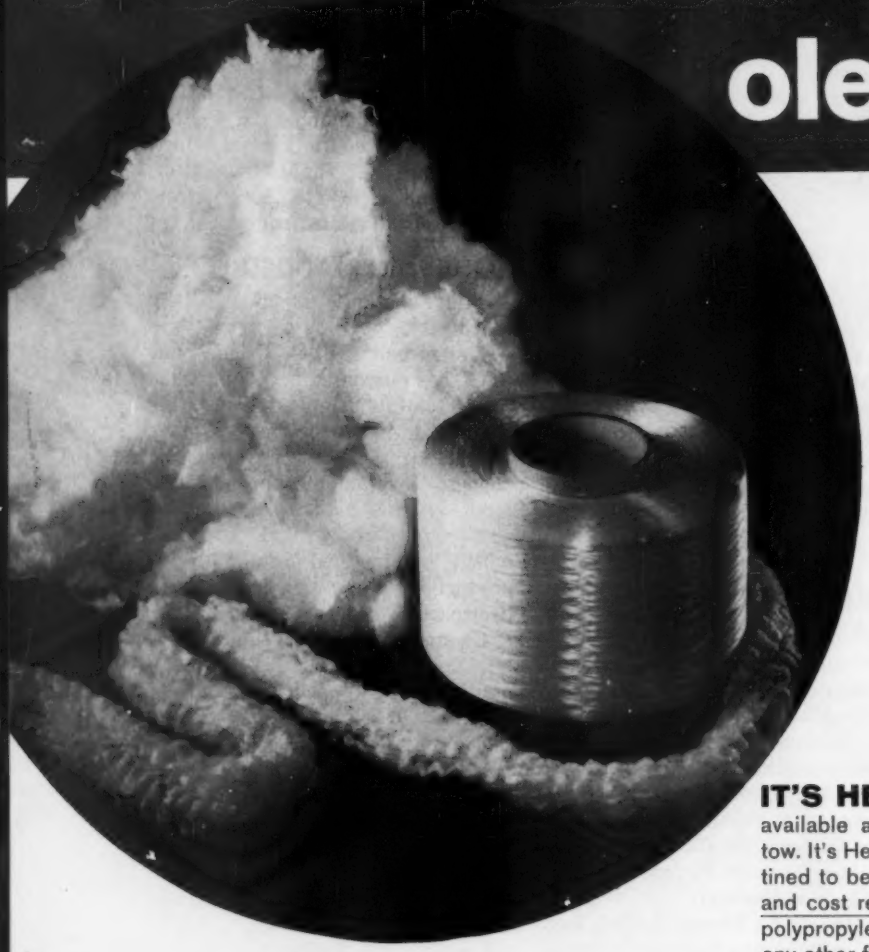
First American producer of polypropylene, Hercules pioneered the successful use of this versatile new plastic in molded luggage, rope, furniture webbing, auto seat covers, packaging film, and a host of other products.

Now on stream, this new Hercules plant at Covington, Virginia, is spinning Hercules polypropylene into the lightest of all textile fibers which are now immediately available for your evaluation. Here, too, Hercules researchers command extensive facilities for textile development work of every description.



POLYPROPYLENE

olefin fiber



Hercules... FIRST commercial producer of polypropylene in the United States, now leads the way in the commercial production of polypropylene fiber

IT'S HERE... first commercial polypropylene fiber, available as continuous multifilament yarn, staple, and tow. It's Hercules polypropylene, the new olefin fiber destined to become the new star in textile constructions... and cost reductions. So light it actually floats, Hercules polypropylene provides greater coverage per pound than any other fiber. It's strong and tough, rates high in resistance to mechanical abuse and chemical attack.

The variety of constructions made with Hercules polypropylene fiber in cooperative studies has already won high acclaim from technicians and designers. We invite you to share in the profitable future of this new fiber—and welcome the opportunity to work with you on product development. To aid you in evaluating markets, ask for detailed physical properties, denier tables, comparative coverage data, and other facts about Hercules polypropylene fiber.

FP61-1

HERCULES POWDER COMPANY

Fiber Development Department • 380 Madison Avenue, New York 17, New York
Branch Office: 1214 Wachovia Bank Building, Charlotte, North Carolina

TEXTILE WORLD . . . News from the Mills

MORE LICENSEES

Here are more licensees for two new textile processes—Woodlyn's multicolor dye effects from a single bath and Reeves' polyurethane heat laminating.

Woodlyn Corp., Spartanburg, S. C., has licensed Carleton Woolen Mills, Inc., Rochdale, Mass., and Lebanon Knitting Mills, Inc., Pawtucket, R. I.

Reeves Brothers, Inc., New York, has appointed Cranston Print Works Co., New York, and Fab-Lace, Inc., New York, licensed laminators.

$6¼-MILLION FOR GROWTH

Expansions totaling more than $6¼-million are reported this month.

For the third time this year **United States Rubber Co.** is modernizing cotton-yarn manufacturing facilities at its Winnsboro (S. C.) plant. Cost: $1.1-million.

Liberty (S. C.) plant of **Woodside Mills** will spend $1½-million by adding to its weaveroom.

Calvine Mills, Inc., New York, has purchased two large buildings for the construction of a new mill in Swainsboro, Ga. The new mill is expected to double Calvine's production capacity. Total investment is estimated at $3-million.

At a cost of over $125,000 **Native Laces & Textiles, Inc.** has enlarged the facilities of its subsidiary, H. & F. Binch, Inc., Glens Falls, N. Y. The new building will house materials handling and storage equipment for tricot fabrics and Raschel laces.

Hadley-Peoples Mfg. Co., Siler City, N. C., will erect finishing and spinning plants costing $550,000.

CAPACITY ADDED

Other mill expansions (cost undisclosed) set the pace for modernization as follows:

In its second major expansion within 5 years, **Mount Hope Finishing Co.,** Butner, N. C., has completed a 12,000-sq-ft. addition. Cost of new equipment: $100,000.

Thomaston Mills, Inc., Thomaston, Ga., is constructing a major addition to the bleachery.

A new 33,000-sq.-ft. plant in Hopkinton, R. I., will house the expanded operations of the Dawn Fabrics Div. of **Warner Brothers Co.**

Quality Mills, Inc., Mount Airy, N. C., has added 34,000 square feet of floor space. The area will house Plant No. 2.

Mayfair Mills, Arcadia, S. C., is adding 50,000 square feet to its No. 1 plant. The firm will also build two new warehouses totaling 15,000 square feet.

Mauney Hosiery Mills, Inc. and **Carolina Throwing Co., Inc.,** Kings Mountain, N. C., are constructing a new building. The structure will add 9,000 square feet for the hosiery mill and 5,500 square feet for the throwing company.

MILLS BOUGHT AND SOLD

Plant and company acquisitions continue to make news.

Flagg-Utica Corp., New York, has acquired Bashore Knitting Mills Co., Schuylkill Haven, Pa., through a stock purchase.

In a second major expansion within recent months, **Kingston Mills, Inc.,** Durham, N. C., has absorbed the operations of Bryant Finishing Co. also of Durham.

Clarence L. Meyers & Co., Inc., Philadelphia, has purchased Ewing-Thomas Corp., Chester, Pa.

Marion Mfg. Co., Marion, N. C., has purchased the synthetic-fiber manufacturing plant of Rocky Creek Mills, Inc., Turnersburg, N. C.

When **Betterwear Hosiery Mill, Inc.** takes over Robinson Hosiery Mills, production will be increased 50%. Both firms are located at Catawba, N. C.

J. P. Stevens & Co., Inc., New York, plans to acquire the woolen plant leased by Burlington Industries, Inc. at Tifton, Ga.

I. A. Wyner & Co., division of Ames Textile Corp., Lowell, Mass., has purchased the knitting, dyeing, and finishing business of Shawmut, Inc., Stoughton, Mass.

To expand its novelty-yarn production, **Tait Yarn Co.,** Lincolnton, N. C., has leased the business and facilities of Franklin Decorative Yarn Co., Gastonia, N. C.

Talon, Inc., Stanley, N. C., has bought Bridgeport Fabrics, Inc., Davidson, N. C. The transaction involved all rights to 300 narrow looms plus all related equipment.

EQUIPMENT ADDED

Mills continue to update their machinery.

Greenwood Mills, Greenwood, S. C., has purchased new equipment for three of its plants. Mathews Mill will install 40 MagneDraft spinning change-overs. Greenwood Plant will convert 33 spinning frames to Duo-Roth systems with installation of change-overs on 9,900 spindles. Ninety Six Plant will install 33 high-production S-L comber change-over parts.

Cannon Mills Co., Kannapolis, N. C., has purchased 220 SJ spinning frames equipped with MagneDraft. At least 58,000 spindles are said to be involved.

Adelaide Mills, Anniston, Ala., has purchased four 96-spindle roving frames.

With the addition of 12 double-sided machines, **Elastic Corp.,** Hickory, N. C., will increase the number of employees by one-third.

United States Rubber Co. has installed a 224-spindle unit of Clarkson cord former at its Shelbyville (Tenn.) plant. The cord former winds and forms either nylon or rayon tire cord in one operation.

NEWS SHORTS

With closing of Arkray Mill, **Textiles-Inc.,** Gastonia, N. C., will consolidate operations by moving its spinning, carding, and twisting frames to four other plants.

Unless **Indian Head Mills, Inc.** can sell or lease its Glendale (S. C.) plant, the operation will close.

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(an expert in TEXTILE TRANSPORTATION)

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Here is a dependable, single-line service offering blanket coverage of *every* point in South Carolina... and coverage of the *most important* industrial areas in North Carolina ... by the carrier providing maximum coverage and service on *all size shipments.*

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Celanese announces
THE
MUSÉE
COLLECTION
1962

Celanese discovers a fabulous museumful of historic fabric designs to inspire magnificent new decorative fabrics for The Musée Collection . . . Celanese 1962 home furnishings promotion.

From the archives of the Musée De L'Impression Sur Étoffes in Mulhouse, France, come fabrics predating the French revolution. This museum is the only one in the world devoted entirely to textile printing. Its collection has been preserved over the centuries, was hidden away in the French countryside during the war, is reassembled now in the museum and brought to light at last by Celanese.

The collection includes carefully authenticated documents, historic commemorative fabrics, rare tapestry designs and thousands more as yet untouched for commercial use. Celanese has been privileged to take exclusive photographs of these treasures and will make them available to converters for translation into fabrics with Celanese Contemporary Fibers. And we will back these fabrics in '62 with every promotional resource at our command. Celanese promotions build fabric demand. Look for even greater demand for fabrics for The Musée Collection—1962 promotion. Be ready for it! Celanese Fibers Company, 522 Fifth Avenue, New York 36

(a division of Celanese Corporation of America)

Celanese®

Celanese contemporary fibers

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 147

(Advertisement)

Dependability is built into Draper looms . . . part by part. Regardless of size, shape or location, each part is engineered and manufactured to precise tolerances. The Harness Cam Assembly illustrated above, is one reason why Draper has become the accepted name for quality and dependability throughout the textile industry.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.

RETARDING LOOM OBSOLESCENCE

A steady flow of new Improved Repair Parts keeps mill weaving machinery up-to-date

Draper Corporation is continually improving parts and mechanisms for its looms. Year after year, scarcely a week passes without the introduction of another Improved Repair Part for one or more Draper loom models. These are all designed by Draper research and engineering staffs to keep present mill machinery competitive with our newest looms.

Each Draper Improved Repair Part is made for application to as many mill loom conditions as possible. Although they may be copied by others, the original design of these parts can be successfully accomplished only by the loom builder, for he alone has complete information on the various loom constructions in the field.

These Improved Repair Parts help to keep older looms operating profitably. They postpone the day when a mill must consider its looms to be obsolete.

What is an Improved Repair Part? An Improved Repair Part is one so developed by Draper engineers that is can be applied, as far as possible, to all existing Draper looms in the mills. It is designed to give one or more of the following benefits:

1. Better service throughout a longer life than the original loom part.
2. Easier installation with less down time.
3. Better loom operation.
4. Production of higher quality fabrics.

How Improved Repair Parts are developed. Ideas for Improved Repair Parts originate from Draper engineering and manufacturing de-

partments, Construction Committee members, Draper sales and service men, recommendations of material suppliers and, frequently, from suggestions by mill superintendents, overseers, and loom fixers.

Usually extensive "mill trials" are conducted, whereby a new part proves itself in actual weaveroom operation, before it is offered for sale.

Although Improved Repair Parts are designed to replace older parts, mills often use both old parts and new Improved Repair Parts simply because supply room bins and records are set up for ordering both. Generally the older number could be eliminated to advantage.

Why Draper Parts are best for Draper looms. Uniformity of parts is necessary for successful standardization in setting loom mechanisms to gauge. Worn or poorly fitting parts just cannot be set to gauge. Competitive mills know that only with the best loom parts available can they get uniform and accurate settings, that *only with gauged settings can they get maximum production, lowest weaving costs and highest cloth quality.* These mills are first putting their looms in top condition and then running them with correct and standardized settings.

In such a planned program, differences in initial cost of repair parts are often found to be of least importance. More and more mills are using Draper parts *exclusively* to maintain their weaving machinery at highest competitive standards. Draper parts are made from the same metal mixes as original parts furnished with the loom. They are finished to master overall gauge dimensions available only to the loom manufacturer. Draper Improved Repair Parts fit Draper looms and each other better; as a result, they are dependable and last longer. Correct engineering design, selection of proper materials and use of economical manufacturing methods are determined for each Draper part by a competent knowledge of their effect upon *total loom operation.*

You can find out more about Improved Repair Parts from your Draper Improved Repair Parts Catalog, from Draper sales and service representatives, or by writing to Draper Corporation.

Draper Link Type Parallel . . . provides a positive fully constrained action, contributing to smoother shuttle flight, improved boxing, simplified adjustment and longer life of Shuttle Box and Pick Motion parts.

DRAPER CORPORATION

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The Sign of a Real Bargain in an IRON BODY GATE

Cost-Per-Year is Lower... Initial Cost no Higher

For generations extra-quality, extra-stamina Jenkins Iron Body Gates were regarded as the best buy for the money . . . even though they cost more to buy. Lower maintenance expense and extra years of service more than offset any price differential.

Today, these widely favored valves are an even bigger bargain in true value. *You pay no more for them at the start!* And you get exactly the same high quality and perfection of design for your money.

You can satisfy all your needs from the complete line of Jenkins Iron Body Valves. Jenkins Bros., 100 Park Avenue, New York 17.

AVAILABLE FROM LEADING DISTRIBUTORS EVERYWHERE

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MOST TRUSTED TRADEMARK IN THE VALVE WORLD
VALVES
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Jenkins Bros

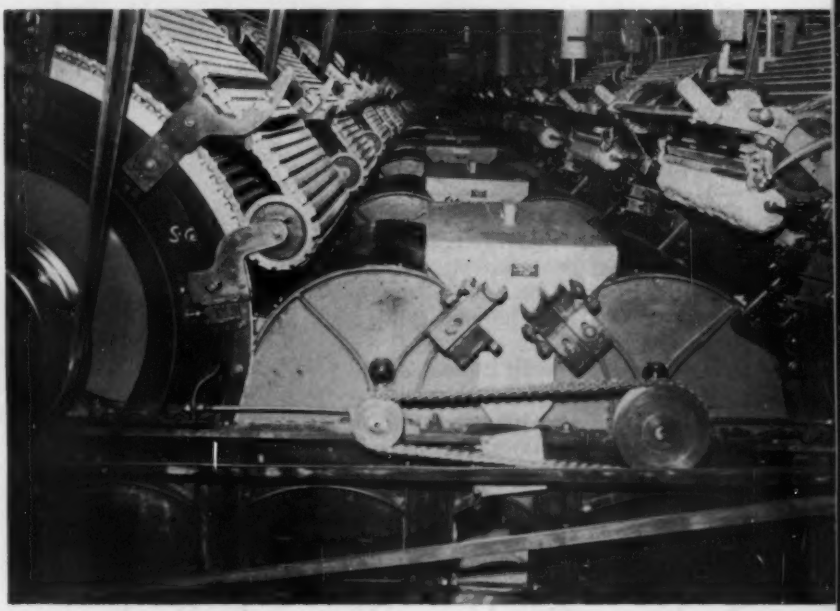
For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

Card System Increases Production 200%

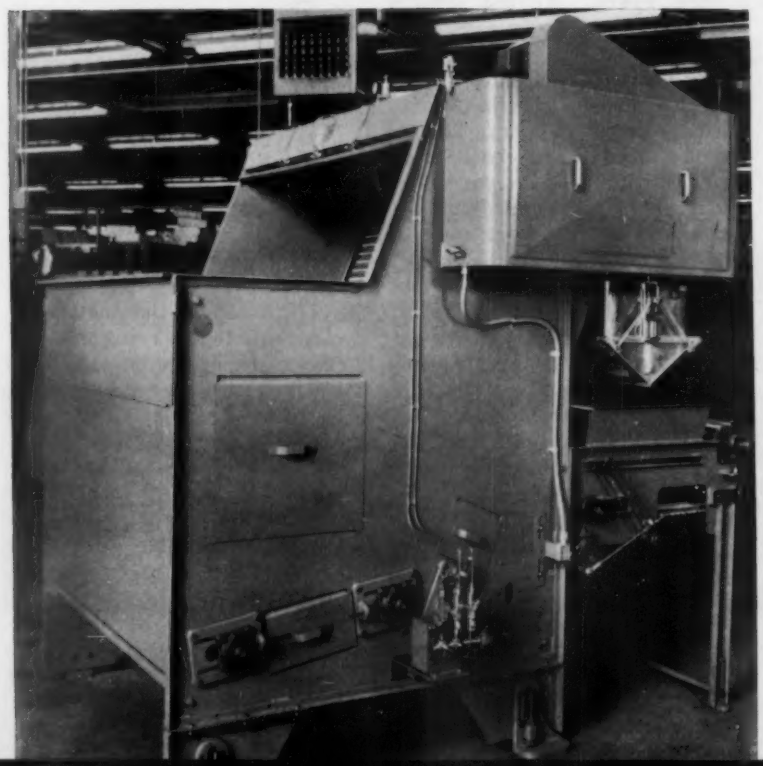
With this system you can increase card output 200%, get better yarn quality, and reduce waste. What's more, you'll also get a saving in floor space. Secret of the DuoCard system: two cards running in tandem with metallic clothing.

The DuoCard, developed by Swift Spinning Mills, Inc., and marketed by Saco-Lowell Shops, uses two conventional cards with the front-delivery section removed from one and the licker-in on the second replaced by a doffer. These cards are placed front to back so that the new doffer transfers the fiber from the first card directly onto the main cylinder of the second.

Although the two cards operate as one, you don't have to compromise on settings. You can set each cylinder individually. **(Write E-1 on Reader Service Card.)**



Conversion Kits Improve Weighing Feeds



Two conversion kits promise to improve performance and cut downtime for all weighing feeds.

One replaces the weight arm and spring-steel suspension strip previously used. Accuracy is not impaired and disk counter weights are eliminated. Scale graduations range from 8 to 32 ounces. Because of improved bearings you'll eliminate downtime from broken suspension strips.

The second unit, called Weigh Pan Air Cylinder, replaces the rotary electrical solenoids and the old style air cylinder that required a spring to return the doors to the closed position. The new air cylinder offers less maintenance.

The James Hunter, Inc., kits come complete with all necessary conversion parts and a complete set of installation blue prints. **(Write E-2 on Reader Service Card.)**

. . . Turn the page

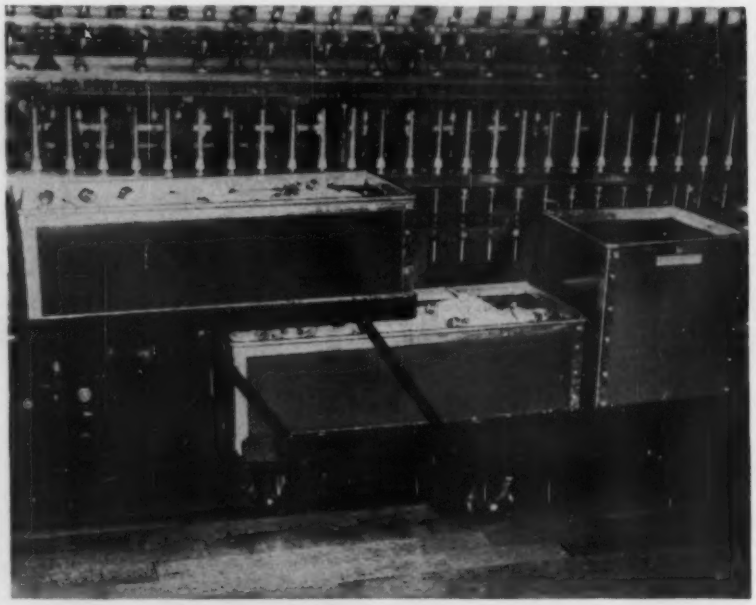
For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

"Flip-Top" Truck Speeds In-Plant Handling

Swing action is the key to this flip-top truck that speeds the in-plant handling of filling, doffing, and carrying fabrics or spools.

The National Fibre Co. truck carries three vulcanized boxes—all accessible simultaneously. Two rectangular boxes sit one on top of the other for easy transit. The bottom box rides on the truck frame—the top one sits on a frame attached to movable arms. The latter flips out over the bottom receptacle during loading or unloading. A square box, about the size of the other two units, occupies the end of the truck.

The company uses an all-welded, angle-iron construction for the truck chassis, which is supported on 4-in. steel casters. Dimensions vary according to specific requirements. **(Write E-3 on Reader Service Card.)**



Automatic Handling of Skeins

This automatic handling system overcomes the problem of shade differences. How? All test samples are standardized to the same conditions.

The system, developed by Automatic Equipment, Ltd., has an insulated tunnel and a control cabinet. Samples from the dyehouse feed onto one end of a conveyor within the tunnel and emerge dried and conditioned at the laboratory end. You put samples in the tunnel through an access door. The first section of the tunnel is steam heated for drying. And the instrument cabinet accurately controls the humidity and temperature. You can set conditions in the tunnel to reproduce those of the production machinery. Therefore once you match the shade you know it won't change.

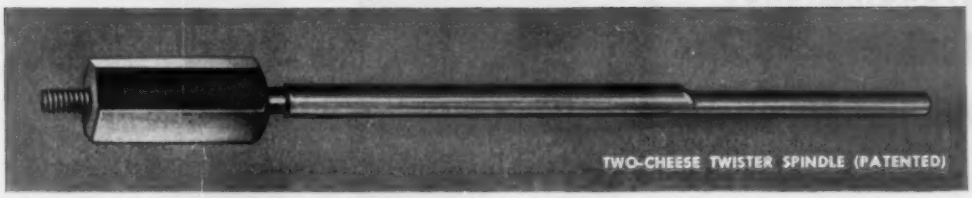
Once this yarn has passed a cooling fan, near the end of the tunnel, the skeins are automatically offloaded in the laboratory. **(Write E-4 on Reader Service Card.)**

E-5—Spinning ring, called Marathon, gives reduced heat build-up and longer ring and traveler life. The ring is heat-treated and electro-polished by an automated process. The process produces a matte surface that lowers the coefficient of friction for the traveler. The bearing surfaces of the rings do not vary because the heat-treating and electro-polishing finish is automated. Saco-Lowell Shops.

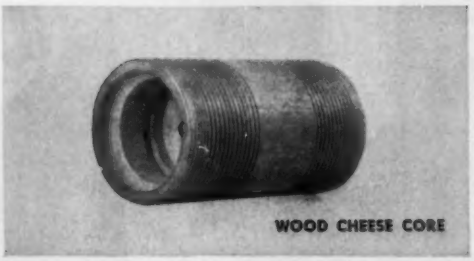
E-6—Pressurized beck handles dyeings at high temperatures. Two types are available—one for dyeings up to 250 F. and another for dyeings to 218 F. You can easily duplicate dyeings because the unit has better control and reproducibility of key elements. The sealed beck also contains all vapors and fumes. One of the many safety features: The operator cannot open the door with the pressure on. Two extras: You need less steam and less water. Burlington Engineering Sales Co., Inc.

. . . *Turn to page 156*

BARBER-COLMAN ACCESSORIES



TWO-CHEESE TWISTER SPINDLE (PATENTED)



WOOD CHEESE CORE

STAINLESS STEEL DYE SLEEVE

BAKELITE CHEESE CORE SLEEVE

USE THESE BARBER-COLMAN PRODUCTS FOR BEST RESULTS

The accessories shown here are carefully designed and developed by Barber-Colman Company for use on Barber-Colman machines. • The Twister Spindle, used with wood Cheese Cores, is a new idea that makes for better twisting. The offset on the end of the spindle retains the outer cheese and lets it run free of the inner one. Thus, by mounting two cheeses per spindle, the height of the twister creel is reduced. • The stainless steel Dye Sleeves fit the same holders on the Automatic Spooler as the regular plastic Cheese Sleeves and were designed and developed exclusively for this Barber-Colman machine. • Since all of these parts are made of best materials to very close limits, they not only are accurate, uniform, and durable, but also insure *top performance* of your machines.

BARBER-COLMAN SERVICE WILL KEEP YOUR MACHINES AT THE PEAK OF PRODUCTION

For many years Barber-Colman Company has maintained a high-grade Service Department, and made its facilities available to all owners of Barber-Colman equipment at reasonable cost. The men who staff this Department are all experienced hands, trained to handle the special problems of Barber-Colman equipment. They are backed by the knowledge and experience of the entire Barber-Colman organization. You can employ this Service in any manner you wish — on a regular contract basis, for specific problems, or in any emergency. *See your Barber-Colman representative for details.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA	MÉXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Barlow & Company Forbes Street, Fort Bombay, India	Isabel la Catolica 45 513 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No. 50, Rooms 1201-3 P. O. Box No. 63 Rio de Janeiro, Brazil	Dai Yon Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome Higashi-ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 153

Increase mill profits with this latest Westinghouse textile equipment

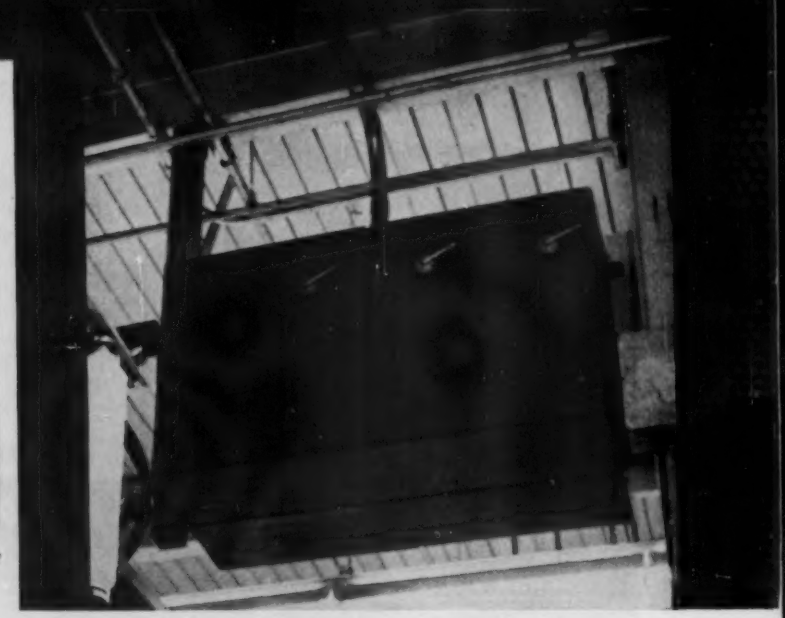
The most effective way to deal with profit-squeezing costs is this: *increase productivity*. Every subnormal operation—poor speed, heavy maintenance, emergency shutdown—extracts its price in production losses or higher costs, hence lower profits.

Efficient electrical drive—motors, gearing, controls—has a great deal to do with machine output and dependable performance at production loads. To be really profit-minded, you should examine critically every electrical drive in your mill. Compare them with Westinghouse advanced-design drives. Chances are you'll quickly discover profit leaks that should be stopped.

Let your Westinghouse Sales Engineer help you make a detailed survey of your electrical drives. Evaluate each in terms of profitable production, then see how easily you can solve costly bottlenecks with Westinghouse drives engineered for the job. Write Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.

You can be sure . . . if it's Westinghouse

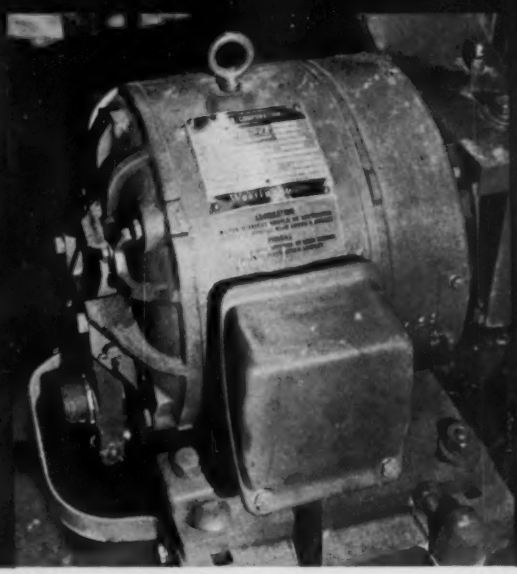
Guardistor motor



Exclusive GUARDISTOR* design permits Westinghouse motors to run at highest available horsepower without danger of burnout. No other drive offers this built-in static motor protection—an important feature in profitable mill operation.

DynAC—a static rectifier unit that converts a-c to d-c for smooth, accurate braking of drive motors—is an important money-saver in any mill. Maintenance costs are minimized because DynAC braking control is not affected by moisture, temperature, oil or humidity. Multiple units save power on every brake application.

Westinghouse



AVR is the ideal drive for adjustable speeds with d-c motors for operation over a wide range of speeds. Constant beam tension accommodates variation in weight, number of ends of yarn. Static design reduces maintenance to a minimum.

Life-Line A loom motors are ruggedly built to withstand the severe demands of loom service. Totally enclosed, they are designed to operate cooler than ordinary types. Clutch brake motor (illustrated) is capable of extended service at high speeds without maintenance.

J-05185

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 155

MODERNIZATION means PRODUCTION IMPROVEMENT

Mill Modernization never ends in Progressive Mills. As a guide, an up-to-date chart of machinery conditions and production possibilities is constantly followed. Modern management always plans or implements studied improvements accordingly.

MODERNIZATION You can benefit in many ways by Mill Modernization, through Davis & Furber's "Coordinated Production." This type of Production puts into one package D&F new equipment, conversion of existing equipment, supplies, accessories, spare parts, technical and engineering services as needed. It ties them right into your production needs.

THE FIRST STEP The first step is to talk direct to your Davis & Furber man, or contact us at North Andover, or Charlotte. From then on, you can get the following, usually without cost or obligation:

1. Professional Preliminary Counsel.
2. Actual in-the-mill Survey.
3. Formal Fact Presentation.
4. Post-Survey Conference.

YOUR OBLIGATION Your obligation to yourself begins when we show you how you can meet your production requirements profitably and at reasonable cost.

STAY COMPETITIVE Our studies are based on knowing what your woolen processing machinery can turn out *before* and *after* Modernization. The D&F survey will tell you what needs to be done to remain competitive.

Now is the time to start action for immediate or long-range production improvement.

P.S. Copies of the new reprint on Yarn Mill Modernization are yours for the asking. Write today.

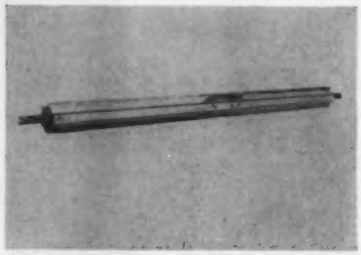
DAVIS & FURBER
MACHINE COMPANY
TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina
AD 15-4
Member — American Textile Machinery Association

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Equipment & Supply News

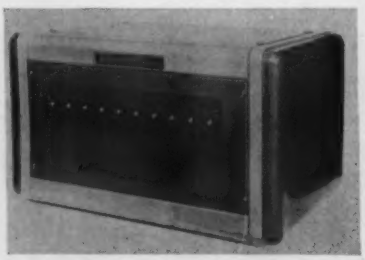
. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.



E-7—Slat expander has slides fastened to ball bearing to eliminate surface-to-surface contact. Result: longer life and silent operation. It's available in wood, aluminum, or plastic slats that can be easily removed for replacement. Associated Professional Engineers.

E-8—Electric tractor, called TSG 12-24, is a combination walkie-rider type. It uses a low speed for walking and a high speed for rider towing. Under a full load of 10,000 pounds, rolling speed is 3.25 mph. Drawbar pull is rated at 550 pounds. The driver controls forward and reverse by pressing a pushbutton in the handle. A backward pull on the handle applies the brake. Barrett-Cravens Co.



E-9—Control station, called Unicode, operates as many as 10 remote stations. The unit will close and trip devices such as circuit breakers or motor switches. The master station has an indicating lamp for each remote station. An alarm sounds when the control position changes. You can hook up 10 remote stations from a single master station with one pair of telephone-type line wires. Westinghouse Electric Corp.

. . . *Turn to page 161*

Brings cushioned, soft starts to textile machinery!

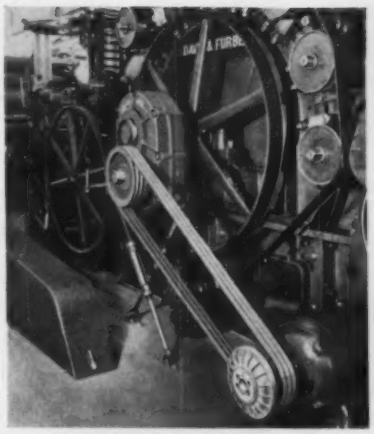
Flexidyne picks up the load smoothly—saves down time from broken ends, keeps yarn uniform. It accelerates quickly to full speed and then operates at 100% efficiency. It saves on motors, controls and power—reduces maintenance—protects motors against shock and overload. Torque can be changed by varying the dry flow charge of heat treated steel shot that is employed to start loads *with fluid ease*. This revolutionary drive is being used with great success in:

• openers • extractors • condensers • beaters • pickers • cotton, wool and synthetic cards • warpers • twisters • roving frames • fly frames • slubbers • tenter frames • slashers • cloth rolling heads • cloth shearing machines

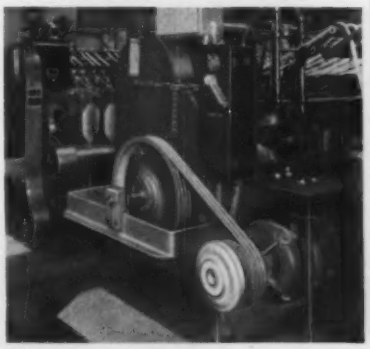
Flexidyne is available from stock in 8 drive sizes and 10 coupling sizes for capacities from fractional to 1000 hp. Ask your Dodge Distributor, or write us for complete technical bulletin.

Dodge Manufacturing Corporation, 1400 Union Street, Mishawaka, Ind.

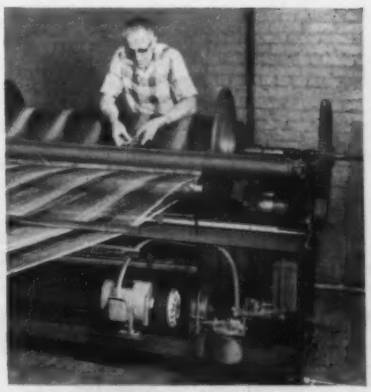
The Products with the Pluses... **DODGE** *of Mishawaka, Ind.*



DAVIS & FURBER 60" WOOLEN CARD



ROVING FRAMES



LONG RAIL BEAM WARPERS

FLEXIDYNE

THE DRY FLUID DRIVE

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Look under "Dodge Transmissioneer" in the *white* pages of your telephone book. Factory trained by Dodge, he can give you valuable assistance.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 157

DAVIS & FURBER

relies upon

HARWOOD BRAMWELL® FEEDERS

engineered to suit the

"Coordinated Production" Requirements

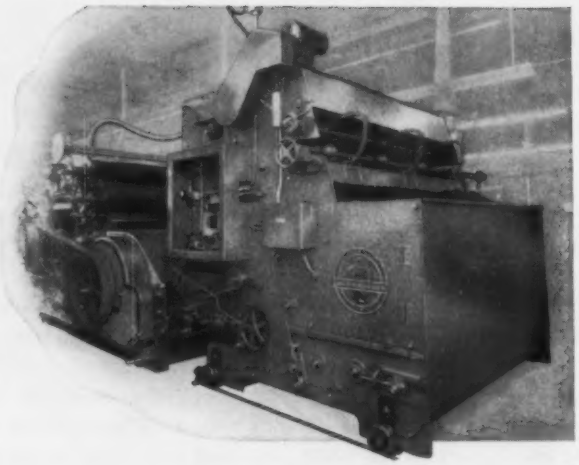
Of Sound Mill Modernization Programs.

Bramwell Feeders are important factors in the "Coordinated Production" performance of new or modernized equipment in the picking, blending and carding departments of woolen system mills.

The starting point for top quality output by these departments is highly uniform feeding of the D. & F. processing equipment involved. The accuracy and reliability with which stock is fed into process determines beyond recall the uniformity of work prepared for carding and for spinning or other subsequent steps in textile manufacture.

This requires highly refined automatic feeding equipment. Harwood Feeders are accordingly standard equipment for modern Davis & Furber installations. Outstanding examples of Harwood equipment for such purposes are Unitized Bramwell Blending Feeders and Type G-series Bramwell Feeders for new D. & F. Cards — or for replacements in card room modernization programs.

Such up-to-date combinations of Harwood and Davis & Furber machinery have repeatedly demonstrated their ability to increase hourly production, to improve the quality of blends and roving, and to lower both operating and maintenance costs. Such installations exemplify the advantages of Mill Modernization on a "Coordinated Production" basis.



Type G-2 Bramwell Feeder on 84" D & F Model L Card

Your inquiries for modern Bramwell Feeders will be welcomed by Davis & Furber or —

Geo. S. Harwood & Son, Inc.

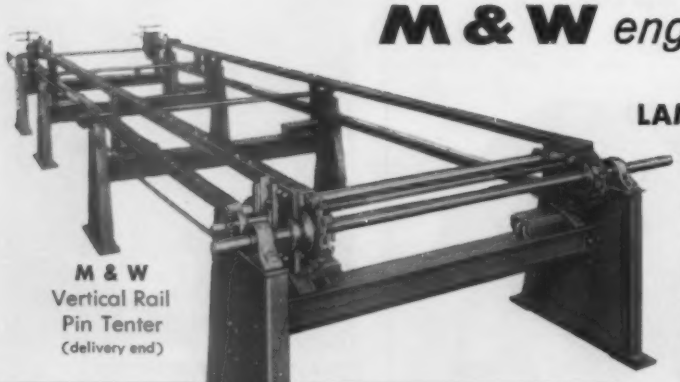
50 LAGRANGE ST., WORCESTER, MASS.

"When you think of Feeders, you think of Harwood."

ADV. NO. 255

M & W *engineers* Pin Tenters

for KNITS LAMINATES TUFTED CARPETINGS COATED FABRICS



M & W Vertical Rail Pin Tenter (delivery end)

Body Style No. 3 & 3A — Body Style No. 3L

M & W Vertical Rail Pin Clips

M & W TENTER Frames in widths up to 18 feet and to any length, are especially engineered and built to your exact requirements for pin tentering knits, tufted carpetings, vinyl and other coated fabrics, laces, woolens, worsteds; as well as for various operations in conjunction with laminating (including foam), curing, setting etc. of these types of fabrics.

M & W PIN TYPE tenter clips are engineered and built to assure exact coordination of pin operation with tenter frame performance characteristics.

M & W SERVICE includes the production and repair of all types of pin bars and pin plates for every kind of tenter frame.

An M & W engineer will be glad to study your pin tentering problems on request — no obligation entailed.

332-1

MARSHALL and WILLIAMS CORPORATION

PROVIDENCE, R. I. — GREENVILLE, S. C.

Canadian Representatives

RUDEL MACHINERY COMPANY LIMITED

TORONTO — MONTREAL

West Coast Agents: E. G. PAULES & CO. Los Angeles, Calif. — Export: AD. AURIEMA, INC., 85 Broad St., New York, N. Y.

ADV. NO. 256

Another of the
invisible extras that
insure the precision performance
of LINK-BELT roller chain

Optical comparator inspection guarantees

precision of every part

Precision is *rigidly practiced* in every step of Link-Belt's roller chain production. The optical comparator is an example of the specialized equipment used to assure precise manufacturing control of chain parts and tools. It is capable of magnification up to 100 times.

Continuous inspection is just one of the *invisible extras* that contribute to the greater strength and endurance of Link-Belt roller chain. Others include precise heat-treat control, prestressing, pitch-hole preparation, shot-peening and burnishing of rollers.

Double- and triple-strand LINK-BELT steel roller chains easily handle the heavy loads encountered by this storage table drive.

These features—plus painstaking precision in every step of manufacture—assure you of chain that can easily cope with today's heavy loads and high drive speeds.

For engineering assistance in applying industry's preferred roller chain, contact your nearest Link-Belt office or authorized stock-carrying distributor. See CHAINS in the yellow pages of your phone directory.

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Warehouses, District Sales Offices and Stock Carrying Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs; Switzerland, Geneva. Representatives Throughout the World. 15,507

LINK-BELT

ROLLER CHAINS AND SPROCKETS

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 159

Pays for itself fast... in labor savings alone!

RIDGID 535 Pipe & Bolt Threading Machine

A Complete Pipe and Conduit Workshop At Your Finger Tips ...For High-Speed Threading, Cutting, Reaming

Full 2" capacity. Plenty of power for up to 12" geared tools. Universal Die Head included threads ½" to 2" pipe and conduit with just two sets of dies. Four other styles of heads available . . . ⅛" to 2" pipe or conduit, ¼" to 2" bolts. Fast hand-action RIDGID Speed Chuck. Cam-Action Rear-Centering Workholder. Automatic re-circulating oil system. Easy-to-Read Length Gauge.

See and Try This Time and Cost-Saving RIDGID 535 at Your Supply House Today

RIDGID

The Ridge Tool Company, Elyria, Ohio, U.S.A.

ADV. NO. 257

ON THE DAVIS & FURBER MODERN H WOOL FRAME

YOU FIND THE ULTRA-MODERN

"DUALUBE" PATENT PENDING

PRESSURE LUBRICATED RINGS

Available in both Conical and Vertical type rings

Here for the first time a pressure-system ring which distributes either grease or oil around the circumference with equal effectiveness. The improved lubrication is permitting higher speeds with longer traveler life.

SIZES 43/64" AND UP.

FITS ALL SYSTEMS:

ALEMITE — LINCOLN

Write for Literature and Price Data

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: H. L. WILLIAMS, 2825 Spring Valley Rd., Charlotte, N. C.
Rep. for Ala., Ga., & Tenn.: C. E. "CHAD" DAVIS, East Lake Shore Drive, Dalton, Ga.

ADV. NO. 258

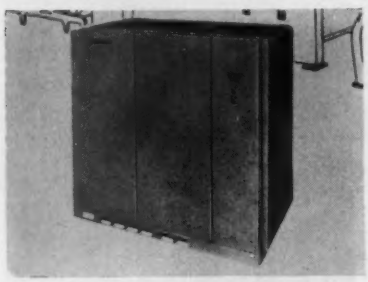
Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

E-10—Spinning ring design, called Dualube, assures lubrication when used with central pressure system. From an intake fitting, ducts carry lubricant to two outlets opposite each other on the ring. It works for grease or oil systems. Whitinsville Spinning Ring Co.

E-11—Tension recorder is lightweight and portable. It uses transistors to reduce its size. The sensing head has a range from 0 to 800 grams. It measures yarn tensions for textile processing such as spinning, winding, and warping. Custom Scientific Instruments, Inc.



E-12—Slasher drive is a multimotor adjustable-speed unit that uses d. c. motors to drive the size box, delivery rolls, and loom beams. The a. c. motor and the d. c. generator are on one shaft in the control box. Armature voltage controls speed of the size box and the delivery rolls. A Magamp regulator excites the silicon-insulated beam motors, which operate in conjunction with a booster generator. You can control each motor independently. Two types are available: single-beam and double-beam drives. Westinghouse Electric Corp.

. . . *Turn to page 162*

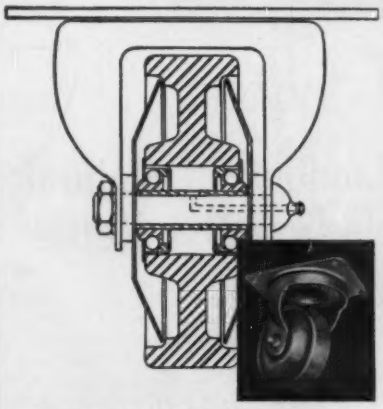
ACHIEVED!

Textile Casters That Won't Bind!

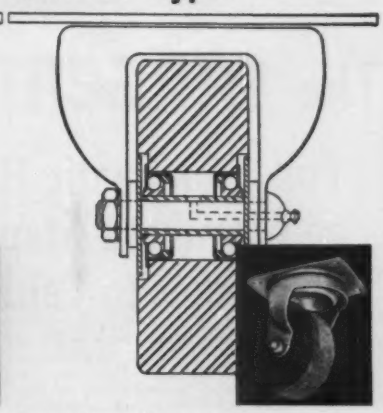
FAIRBANKS TEXTILE CASTERS

Never Before Such Sure-Fire Protection Against Threads And Lint!

Available In 2 Wheel Types:

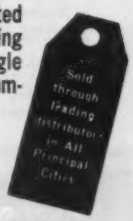


Precision cast, ballbearing semi-steel wheel—perfect concentricity; smooth, thick tread and big tread edge radius — protects floors and rolls and swivels easier. Threadguard protects in two directions: vertically, by tight fit to concentric inner edge of wheel tread; horizontally, by tight fit to molded step on web of wheel. Spacer washer, between threadguard and caster leg, eliminates V trap—allows lint and thread to fall free or, if caught, cleaning out without removing wheel. Available in 4 and 5 inch sizes.



"LAMILON", All-Plastic, ballbearing wheel permits standardization on one wheel for any section of the plant. Protects wood and concrete floors, resists sticking of ring travelers and gives excellent service in bleacheries and dye houses. Tight flush-face threadguard has very close fit in machined recess in wheel. Flush-face design decreases chance of falling lint and thread catching in wheel. Spacer washer, between threadguard and caster leg, eliminates V trap—allows lint and thread to fall free or, if caught, cleaning out without removing wheel. Available in 4 and 5 sizes.

Fairbanks patented "LOCKWELD" Steel Swivel Casters have eliminated the king-pin — major cause of swivel caster failures — providing stronger, easier swiveling, longer lasting casters. Available in single ball race, regular duty, sizes 2 to 6 inch; double ball race, medium-heavy duty, sizes 3 to 8 inch, with matching rigid casters.



THE **Fairbanks** COMPANY

Executive Office: 393 Lafayette Street, New York 3, New York

Valves • Dart Unions • Casters • Trucks • Wheels

520 Atlantic Ave. Boston 10, Mass. | 2600 S. Throop St. Chicago 8, Ill. | 393 Lafayette St. New York 3, N. Y. | 15 Stanwix St. Pittsburgh 22, Pa. | 202 Division St. Rome, Ga.

Factories — Binghamton, N. Y. and Rome, Ga.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 161

How to Cut Costs in Fibre Processing

The SARGENT System...

Fully Automatic Handling of Natural and Synthetic Staple from Dye Kettle or Washer to Card.

Delivers uniformly dried, lofty stock at high volume rate. Releases manpower for other work. Better than 1,000 lbs. per hour produced continuously, day in, day out. Installations have cut processing costs better than one-third.
This highly efficient, economical Sargent-designed system has only five units:

1. Rotary type Wet Feeder takes air-blown wet fibres from the dyehouse, feeds them to squeeze roll machine. Has ball-bearing main cylinder with stainless steel teeth, a rotary comb, two heavy rubber aprons — one to feed fibre to main cylinder, the other to deliver fibres to nip of squeeze rolls.
2. Extractor has sectional rubber ring roll, hammered steel bottom roll with fine knurl. Pneumatic loading, two air cylinders, control panel and indicating dial. Working at 80 lbs. pressure estimated air consumption is 4 cfm.
3. Stock Fan and Cyclone Condensor. Stock fan takes fibres from extractor, delivers them to cyclone condensor mounted above hopper of dryer feed, opening fibres and conditioning them for even, smooth delivery to dryer.
4. Rotary Feeder delivers even layer of fluffed fibres to dryer conveyor. Designed to effect a semi-combing action, eliminating matted bunches for more uniform drying, fewer neps at card.
5. Dryer with Blow-Up Section. Air-flow is down through traveling stock, with up-draft at blow-up section, midway of dryer. A highly efficient way to redistribute fibres evenly over stainless steel perforated flight conveyor and to even out moisture content of all fibres. Equipped with air-operated recording type temperature controls complete with steam control valves and air filter. These dryers are designed for easiest cleanout, fastest installation and highest operating economy of any dryer on the market.

Every machine in the system boasts Sargent's rugged construction; with simplicity of design, minimum maintenance, dependable, steady performance. Here is a system to save you money, man-power, time. Let us give you complete details.

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA • CINCINNATI • ATLANTA • CHARLOTTE • HOUSTON • CHICAGO • DETROIT • TORONTO

Equipment & Supply News

. . . *Begins on page 151*

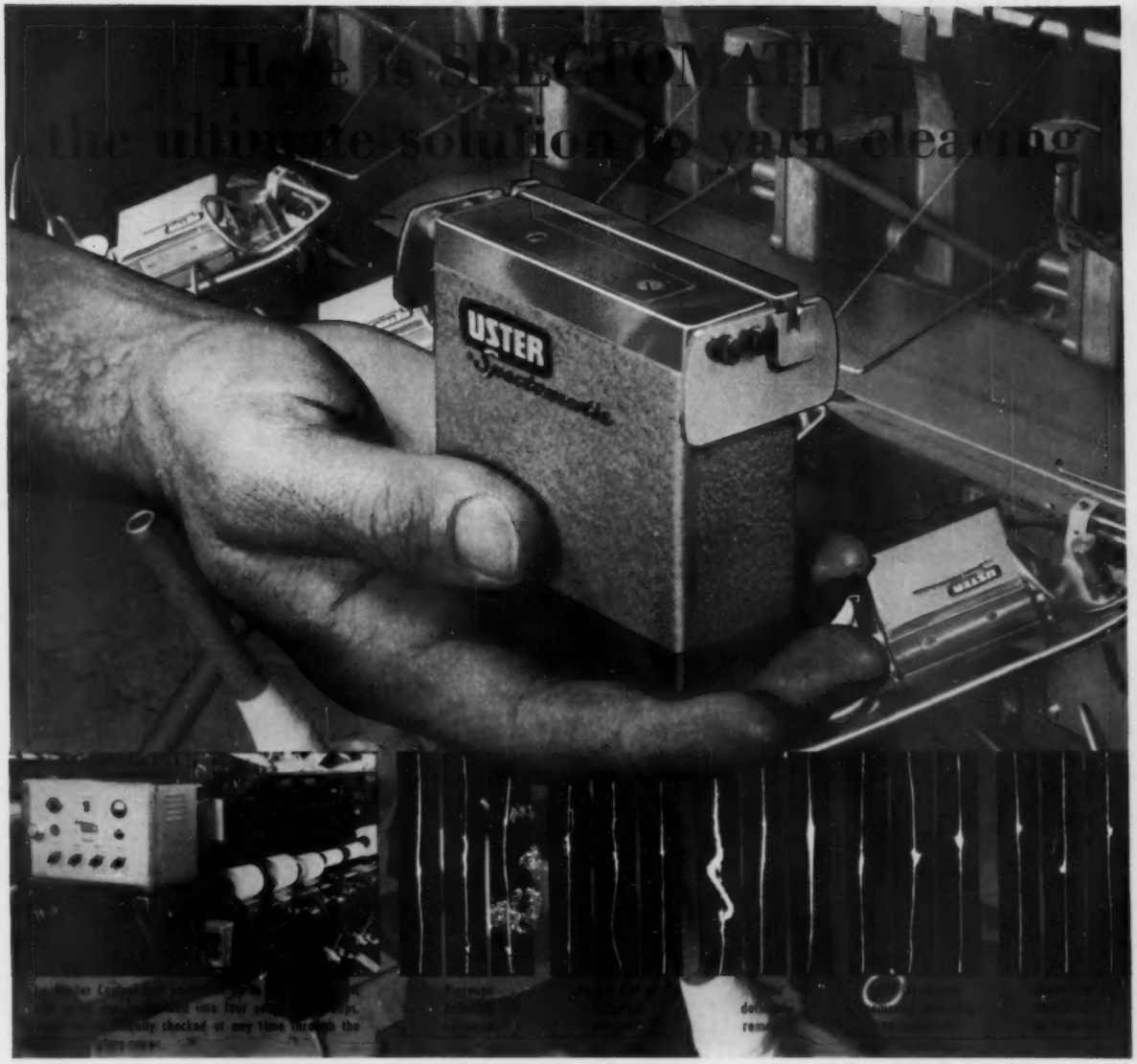
For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

E-13—Limit switch, oil-tight type AW, is now available with a 2-pole, double-throw snap switch that eliminates the need for a second limit switch or control relay. It comes in pushrod, roller-plunger, or roller-arm types in a variety of lengths and designs. Square D Co.

E-14—Pipe hanger, called Tube-Con, reduces installation time because of its special design. The hanger is a metal band, $\frac{1}{16}$ inch thick and ⅜ inch wide, with a locking insert, threaded to take the hanger rod. Spring action locks the insert in place. It handles ½ to 2-in. pipes with ¼-in. hanger rods. It holds up to 285 pounds. Finish is zinc, copper plate, or steel. Automatic Sprinkle Corp. of America.

. . . *Turn to page 166*

Here is SPECTOMATIC—
the ultimate solution to yarn clearing



An entirely new measuring principle—designed to meet your most exacting yarn clearing requirements — is incorporated into the new, fully transistorized Uster Spectomatic. Units can be precisely controlled to distinguish between faults which *you want removed*, and those which *can be left in* the yarn. In other words, Spectomatic will not cut where there would be no advantage in replacing the fault with a knot. Consequently, you can expect and will receive optimum yarn clearing.

Spectomatic's electronic measuring device does not come into contact with the yarn so there is no danger of chafing. *And*, by being *fully transistorized*, Spectomatic is virtually service-free and has practically an unlimited life expectancy.

Spectomatic removes *approximately 65% more slubs* than existing mechanical slub catchers and because units are not affected by vibration, they may be mounted directly on the winder. Spectomatic operates on very low voltage and is not affected by power fluctuations. It requires no warm-up period.

Adjustments for yarn count change at the winder are fast with Spectomatic. The sensitivity of an entire frame can be changed in just three seconds by resetting the Master Control Unit instead of adjusting each individual unit. Critical sensitivity remains constant day to day and the possibility of unit to unit variation is extremely remote.

Send for more information on Spectomatic — truly today's ultimate solution to yarn clearing.

USTER

EVENNESS TESTER • INTEGRATOR • SPECTROGRAPH • IMPERFECTION INDICATOR
VARIMETER • STRENGTH TESTER • SPECTOMATIC • WARP PREPARATION EQUIPMENT

USTER CORPORATION, CHARLOTTE 8, NORTH CAROLINA

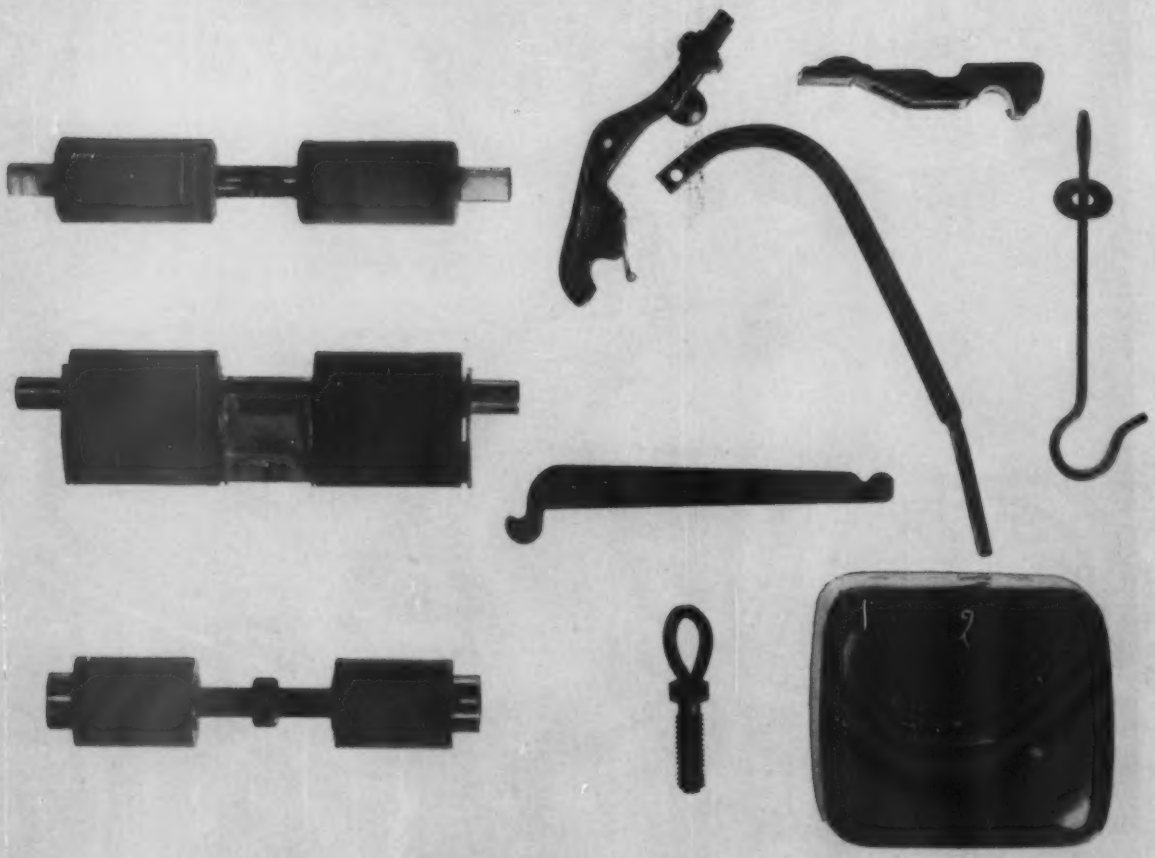
Canadian Sales Office: Hugh Williams & Company, 77 York Street, Toronto 1, Ontario

*CONTINUOUS QUALITY CONTROL IS ABSOLUTELY ESSENTIAL FOR EFFECTIVE MACHINERY MANAGEMENT. A FULLY EQUIPPED USTER EVENNESS CONTROL SYSTEM IS LITERALLY THE NERVE CENTER OF AUTOMATION.

© Uster Corp. 1961

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 163

Which is easier to care for...



This...

3500 less parts to oil, clean, maintain when you switch to MagneDraft . . . the only Spinning System that consistently produces high quality

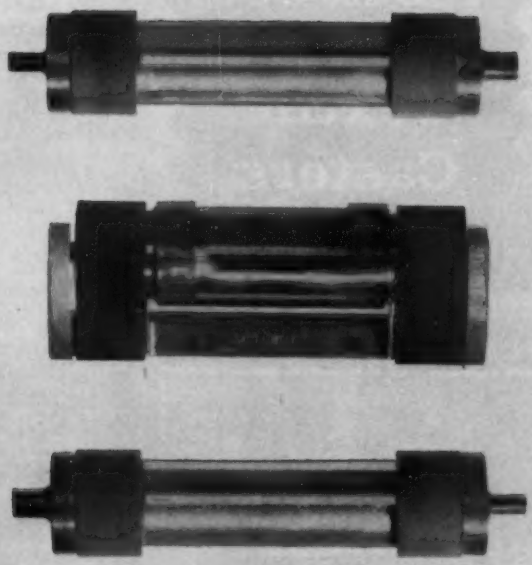
Saco-Lowell's MagneDraft* spinning system lets you replace the complicated and cumbersome drafting of conventional systems, shown above at left, with the simple 3-piece assembly, above next page.

MagneDraft's simplicity results from unvarying magnetic forces. Saddles, stirrups, levers, hooks and springs or weights are dispensed with entirely, for 7 less parts per 2 spindles... 3500 fewer parts per 1000 spindles.

With no lubrication required in the drafting zone, MagneDraft spins cleaner. Parts that do require cleaning are easily reached — for a savings, in all, of 60 to 90% of normal cleaning time.

Like all Saco-Lowell products, MagneDraft spinning systems have these two important plus values for you:

Built for Better Performance. MagneDraft creates a positive nip. The squeezing action between top and bottom rolls eliminates deflection of the bottom rolls.



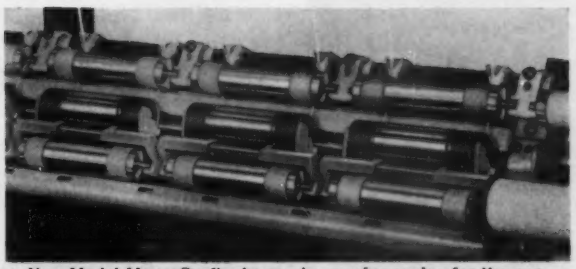
Or This?

Backed by Better Service. A staff of specially trained consultants is available to help you in planning your MagneDraft installation or change-over... to provide any data or assistance you may wish.

Already in use in mills everywhere, MagneDraft is preferred by mill personnel at every level... proving once more that in textiles, as in other fields, the simplest answer is often the best.

*U.S. Patent Number 2,686,940.

For reprints of an actual mill report on MagneDraft performance, with statistical tabulations, write Saco-Lowell Shops, Textile Machinery Division, Greenville, S. C. Or contact the Saco-Lowell sales office nearest you.



New Model MagneDraft, shown above, wins praise for the convenient end-around piecing its top front roll support permits. Available also in standard model without this feature.

SACO-LOWELL SHOPS

TEXTILE MACHINERY DIVISION

EXECUTIVE AND SALES OFFICES, GREENVILLE, S. C.

BRANCH SALES OFFICES: ATLANTA, GA., CHARLOTTE AND GREENSBORO, N. C., GREENVILLE, S. C., AND SACO, MAINE.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 165

NEW!

Faultless
100 and 500
SERIES
Textile
Casters

Series 500
Rigid Plate
Caster

Snagged threads that bind doff box or truck casters needn't stop your textile production! Faultless has designed NEW *textile casters* with *wide*, easy-to-get-at *clearance* between caster wheel and horn. Low cost Faultless 100 and 500 Series Casters also feature corrugated steel construction for added strength, ball bearing assembly in hub to absorb side thrust, deep drawn thread guards, and wide choice of wheels to suit a variety of load and floor conditions.

Series 100
Swivel Plate Caster

Special sturdy King Pin; large diameter ball bearings roll in uninterrupted, lubricated raceway.

Ask Your Distributor

Your local Faultless Industrial Distributor has a wealth of information on caster applications, and he maintains a caster stock. Both he and the local Faultless Sales Engineer will be glad to work with you.

NOELTING
Faultless Caster Corporation
Casters
Evansville 7, Indiana
Branch Offices in principal cities; see the Yellow Pages of the telephone book under "Casters."
Canada: Stratford, Ontario

Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

E-15—Flexible roller curve—for use on conveyors—switches materials onto spur lines to the left, right, or straight ahead. It connects to gravity or power conveyors and can be hand- or motor-operated from remote locations. The three-way switch will divert materials 45 degrees to the left or right. With the "Y" switch you can also channel three lines into a main line. Rapids-Standard Co., Inc.

E-16—Closed-circuit television, called Hawk 401, is weatherproof and dustproof. You can operate it through rain, snow, and wind storms (up to 40 mph.) without picture interruptions. Unit withstands temperatures from —22 to 131 F. Diamond Electronics.

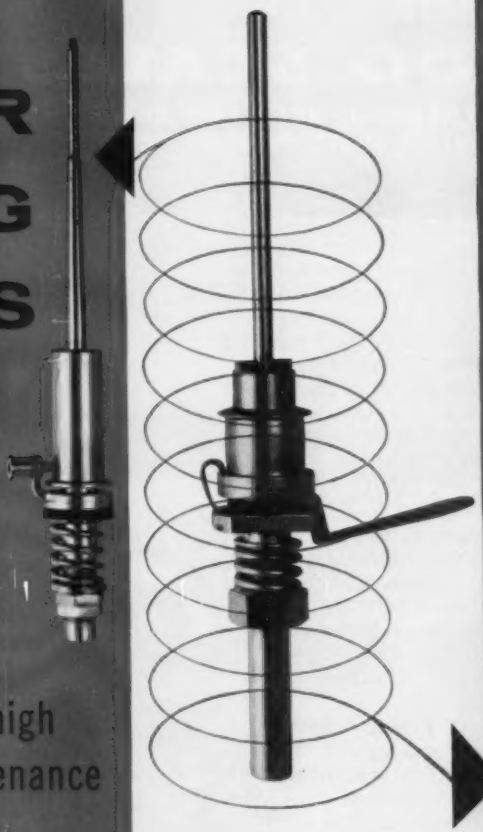
E-17—Variable-speed drive, for fractional horsepower, features lubrication-free pulleys that eliminate corrosion and wear. It's available in ¼ to ¾ horsepower with speed variations from 2:1 to 10:1. Output speeds; from 10 rpm. to 4660 rpm. Sterling Electric Motors, Inc.

E-18—Aerosol spray tests baled cotton for damage caused by microbiological attack. The key: changes in color. With the spray you can make the test in warehouse or field. Time: 10 to 60 seconds. One man checks 75 bales an hour. General Aerosols, Inc.

. . . *Turn to page 168*

marquette

ROLLER BEARING SPINDLES are *fast*



Built for continuous high speed and low maintenance

They spin as fast as your machine requires and they spin for days, months and years. Only Marquette makes roller bearing spindles with the exclusive full-floating footstep bearings that make light work of heavy packages at tremendous speeds, increase your production, upgrade your yarn in quality and reduce ends down. Whether cotton, synthetics, wool or worsted—there's a Marquette spindle for spinning or twisting every kind of yarn, for all package sizes.

MANUFACTURED BY
MARQUETTE DIVISION
CURTISS WRIGHT
CORPORATION
CLEVELAND 13, OHIO

DISTRIBUTED EXCLUSIVELY BY:

Utex
INCORPORATED

A SUBSIDIARY OF U. S. TEXTILE MACHINE COMPANY
SCRANTON, PA. — GREENVILLE, S. C.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 167

WEIGHTLESSNESS MAY BE A FACTOR IN OUTER SPACE...

but on Earth

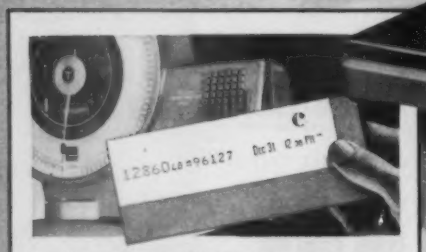
TOLEDO SCALES

FILL AN EXPANDING NEED FOR BETTER WAYS TO CONTROL COSTS, INCREASE PROFITS

Materials become money, on your scales. And with materials up in cost, and profits under pressure, you need complete, accurate weight records now more than ever before. Without them, a vital ingredient for effective control of costs, inventories and quality is missing . . . and the door is open to serious losses. This is why so many management men are taking a fresh look at weighing.

It is especially important to re-evaluate weighing operations if you've made changes in plant layout, materials handling methods or inventory controls. In *any* of these areas, scales that don't fit the job may throttle production and infect weight records with costly errors.

Let us help you check weighing efficiency in your operations. A few minutes at each weighing station will give you valuable information on scale capacity and location, dial visibility, platform size and height, weight records and other key factors. Write TOLEDO SCALE, Division of Toledo Scale Corporation, Toledo 12, Ohio.
(*Toledo Scale Company of Canada, Ltd., Windsor, Ontario*)



Complete, Full-figure Printed Records with Toledo Printweigh® "400". Takes the "human element" out of weighing, and so eliminates errors in reading, remembering and recording weight data. Prints weights in full figures on tickets, sheets or strips. Will transmit weight data electrically for recording at remote locations. Ask for Bulletin 2017.

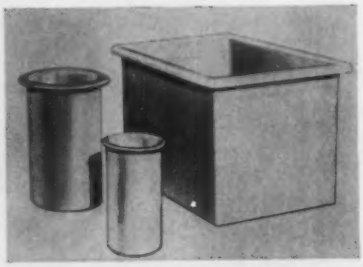
SERVICE
Factory-Trained
240 Cities

TOLEDO® *Headquarters for Weighing Systems*

Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.



E-19—Polyethylene container (portable type) handles corrosives safety and prevents contamination. It's unbreakable, lightweight, and easy to clean. Takes temperature up to 180 F. Optional features: fitted valve, drain, inlet, outlet, overflow connections, and covers. It comes in 11 sizes, with custom containers available to meet any specifications. It's seamless molded for strength. Apex Reinforced Fibre-Glass Div.

E-20—Strap dispenser holds the same length for all type straps up to 0.75x0.028-in. mill-wound coils. A guide holds the strap ready for use. A friction brake (on the reel) controls strap feed. A wing nut adjusts the brake. Stanley Steel Strapping.

E-21—Heat exchanger uses ring seals and floating head so its tubes can expand and contract without mixing fluids. Vibration or temperature won't affect the ring seals. Shell diameter range—6 to 16 inches. Unit is suitable for use in oil or water cooling for gasoline engines, compressors, turbines, reduction gears, and bearings. One or two-pass models are available. Basco, Inc.

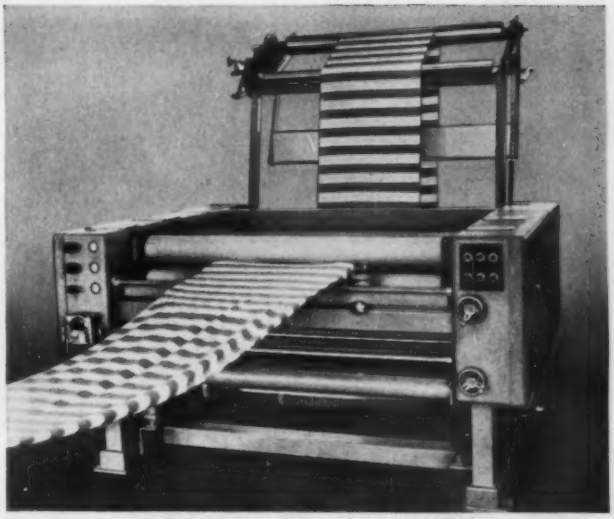
. . . *Turn to page 170*

NEW . . . FROM TURBO

FOR TUBULAR KNIT GOODS

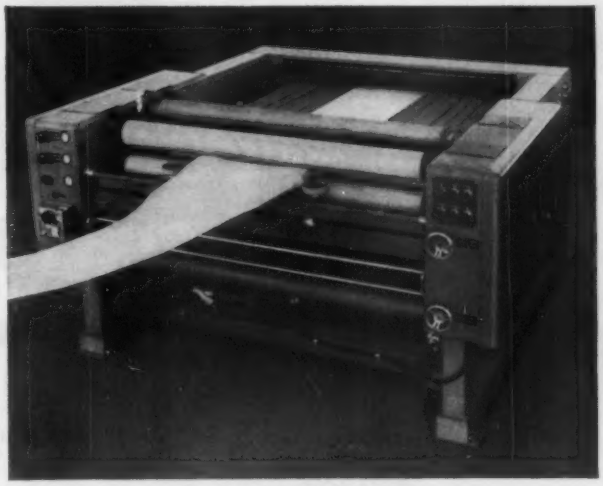
These two new Turbo machines will help you speed production and lower costs, while increasing product quality. In the TURBO PADDER EXTRACTOR for instance, padding and extracting operations are combined in one efficient machine for faster production in sizing, and the application of resins and other finishes. A circulator pump keeps liquor in continuous circulation for even dispersal. In the TURBO FINISHER, fabrics are stretched, steamed and pressed, then rolled neatly or folded. Check the features below, you'll see why you get superior results with both of these Turbo machines.

- Patented spreader-feeder combined with a controlled fabric tensioner attached to press rolls
- Pneumatic loader for more accurate pressure control
- Speeds up to 60 yards per minute, depending on type of fabric being processed
- Fabrics rolled or neatly folded
- Quick-acting safety-bar stops equipment instantly in case of emergency
- Push button controls
- Maintains complete dimensional stability of the fabric
- Nip pressures can be varied to any fabric thickness, including thermal fabrics
- Handle any type and weight of fabric up to 64″ wide
- Single, double and triple ends can be finished at the same time



TURBO PADDER EXTRACTOR

DIMENSIONS: 118½ inches long. Height, machine: 51½ inches; height, beamer: 102 inches. Width: 97½ inches. Approximate weight: 2200 lbs.



TURBO FINISHER

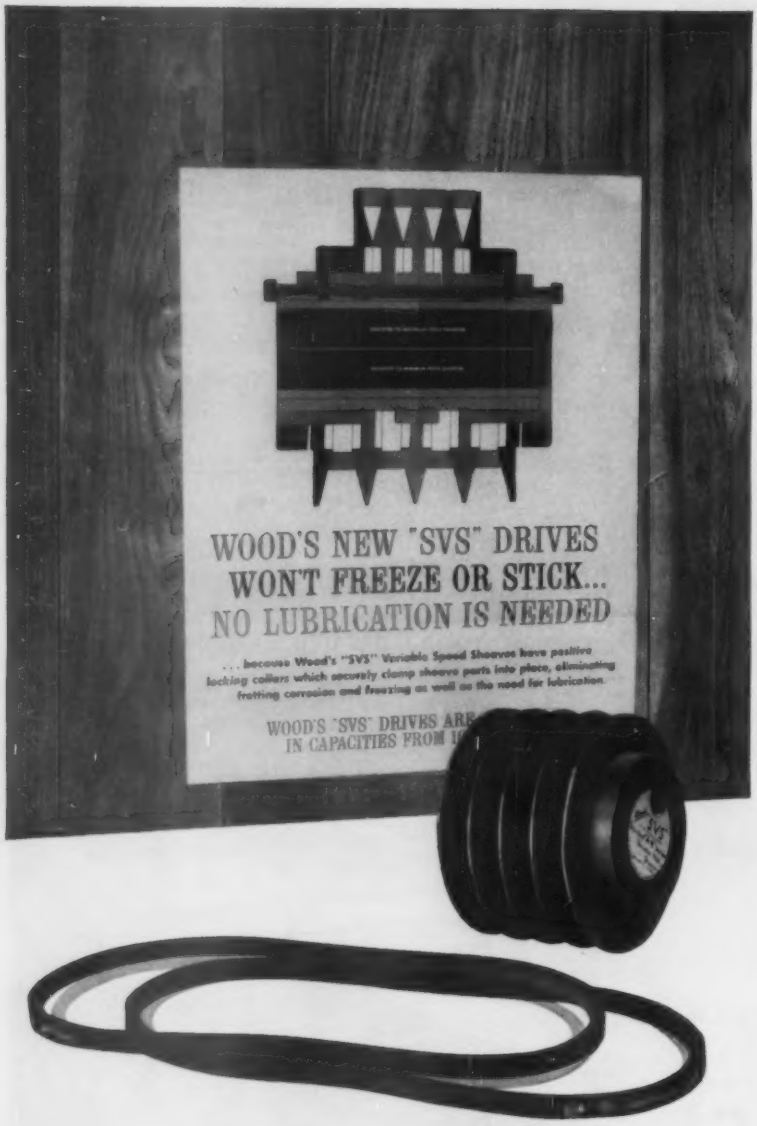
DIMENSIONS: 150 inches long with flat folder. Height: 51½ inches. Width: 97½ inches. Approximate weight: 2000 lbs.

TURBO

SEND FOR BULLETINS

TURBO MACHINE COMPANY, LANSDALE, PA., U. S. A.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 169


WOOD'S NEW "SVS" DRIVES
WON'T FREEZE OR STICK...
NO LUBRICATION IS NEEDED
. . . because Wood's "SVS" Variable Speed Sheaves have positive locking collars which securely clamp sheave parts into place, eliminating fretting corrosion and freezing as well as the need for lubrication.

Wood's stationary control, variable speed drives, including SVS types, are available in capacities from fractional to over 300 hp using conventional v-belts. Wide range VPS types are available in capacities from 1 to 20 hp.

Write for BULLETIN 6102.

Woods

T. B. WOOD'S SONS COMPANY . CHAMBERSBURG, PENNSYLVANIA

ATLANTA · CAMBRIDGE · CHICAGO · CLEVELAND · DALLAS

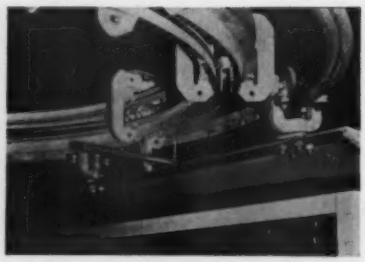
SVS/2361

Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

E-22—Conveyor trolley with Teflon-sealed ball bearings eliminates grease and oil drippage. It operates at room or medium oven temperatures. The seal is moisture- and heat-resistant and chemically inert. Capacity: 250 pounds. American Monorail Co.

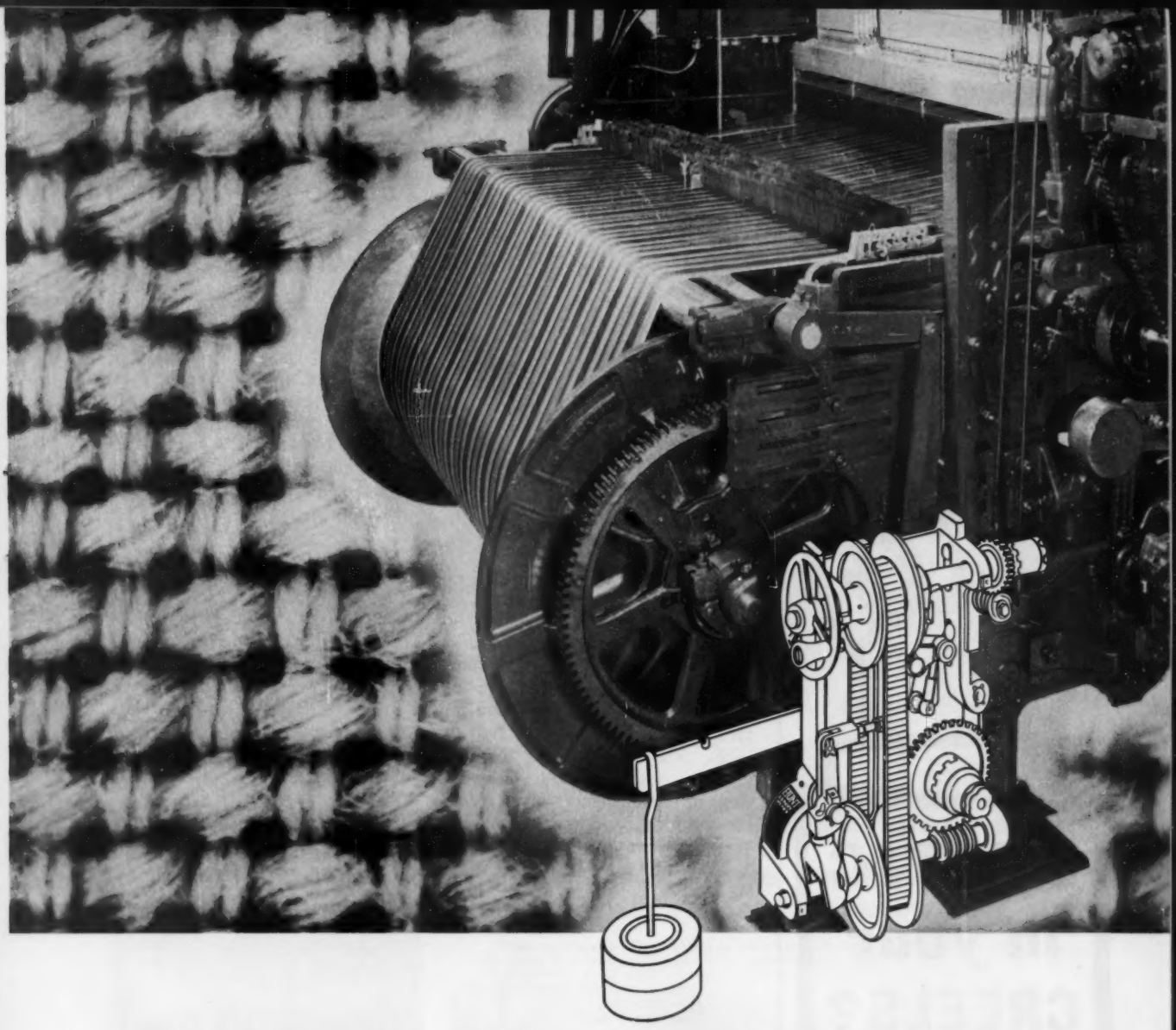


E-23—Overhead conveyor uses trolleys, connected to solid-steel rods with ball-socket joints, for pushing carriers. It needs no corner sprockets, traction wheels, or rollers on curves. Power goes to the trolleys through a continuous roller chain. Carriers ride on a parallel heavy-duty track. Capacities go to 4,000 pounds. Spur tracks with manual switches provide loading stations. American Monorail Co.

E-24—Coal boiler, a packaged unit, is completely automatic. It feeds coal, removes ash, starts, banks, and operates over a wide load range through an integrated control system. Fans are used for draft, overfire air, and removal of combustion products. The grate is a water-cooled, self-cleaning type that vibrates to move the coal through the combustion stages. Canton Stoker Corp.

E-25—Chain wrench operates in either direction without refastening. Why? Because of a special double-jaw construction. It works on ⅛- to 4-in. pipe, has a ratchet-like action. Handle and jaw are nickel-chrome plated. Chain length: 15¾ inches. Ridge Tool Co.

. . . *Turn to page 172*



YOU WILL SELL MORE CLOTH!

You'll Sell More Cloth
When you apply the Hunt Let-Off® to your looms in use or specify it on new C & K or Draper Looms.

You'll Sell More Cloth
Because the Hunt Let-Off eliminates wavy lines and thick-and-thin places that cause the "hungry" look.

You'll Sell More Cloth
Because the Hunt Let-Off does away with set marks due to loom stops to adjust tension.

You'll Sell More Cloth
Because the Hunt Let-Off controls the warp beam on your loom, maintains constant, even tension from full to empty beam. Result: your perfect cloth is measured in miles instead of yards . . . your sales and profits on the rise.

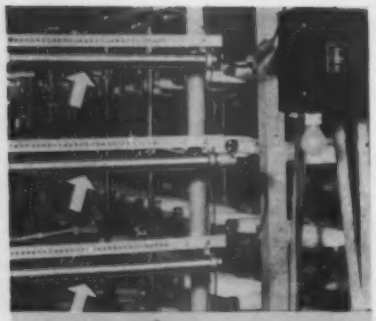
For complete details about the Hunt Let-Off, write, wire or phone for free booklet.

SOMACO®

SOUTHERN MACHINERY COMPANY
Box 3217 – Station A • 5806 Augusta Road
Greenville, South Carolina • CRestwood 7-2116

In Europe or India:
Casablancas High Draft Co., Ltd.
Bolton St., Salford 3, Manchester, England

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 171



STATIC in your CREELS?

With the perfection of the Simco "Midget", there is no longer any reason to endure the problems of static slowdown in your creels. This electronic neutralizer is *unconditionally guaranteed* to end ballooning, or even the opening of zero-twist yarns. Shown above are three "Midget" static bars, mounted at the stop-motions, safely and effectively permitting static-free operation. Why not write for facts?

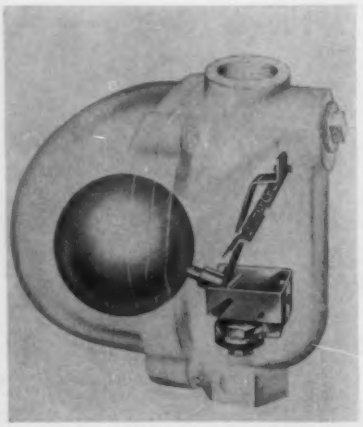
Simco is America's largest manufacturer of anti-static equipment for *all* machines.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

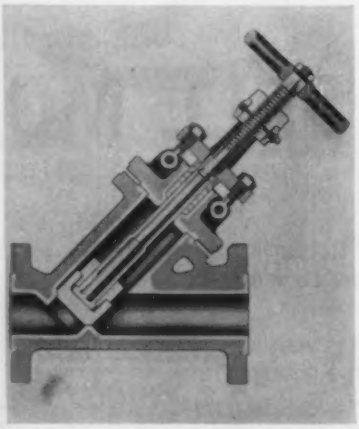
Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

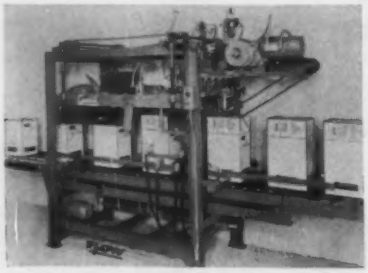


E-26—Steam trap, with a stainless-steel bimetal thermostatic air vent, provides continuous discharge of condensate and air. There are no pivots to wear or cause the trap to stick. The ball and all working parts are stainless steel. Uses include heat exchangers, cylinder dryers, and presses. Standard thread is ¾ inch. Pressure ratings are 0 to 3, 75, or 150 psi. Farris Engineering Corp.

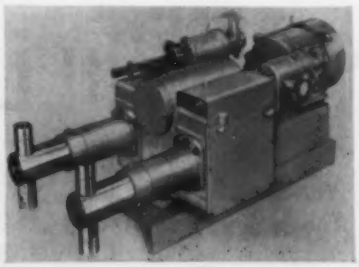


E-27—"Y" valve is plastic lined for use with corrosive liquids. All wetted surfaces are protected. Three types are available and you can choose the one you need for the type of corrosive you're handling. Sizes: 1 to 3 inches for 150 psi. Wm. Powell Co.

E-28—Pilot-light kit is available for Square D Size 00 Starter. It comes in three rated voltages—110, 208/220, and 440/550. The light works on any frequency from 25 to 60 cycles. The two-piece lens (designed for maximum light diffusion) and lens cover fit into the knockout panel on the Size 00 Starter. The neon bulb and socket assembly mount on the top coil terminal. Square D Co.



E-29—Box sealer indexes cases, closes top flaps, and completes the sealing operation at a rate of 50 boxes an hour. Over-all length including the compressor is 9 feet. Belts feed the cases and close the flaps. General Corrugated Machinery Co., Inc.



E-30—Proportioning pump controls flow of chemical liquids, slurries, and liquefied gases in large volume. Capacities range from 1.83 to 1,472 gph. at pressures up to 6.5 psi. The spring-loaded, double-ball check valves have a control accuracy of ±6.5%. One unit, which is powered by any standard drive, can control from 1 to 4 liquid ends. Timing controls are available. Jaeco Pump Co.

. . . *Turn to page 174*

"No more tight ends in our warps"

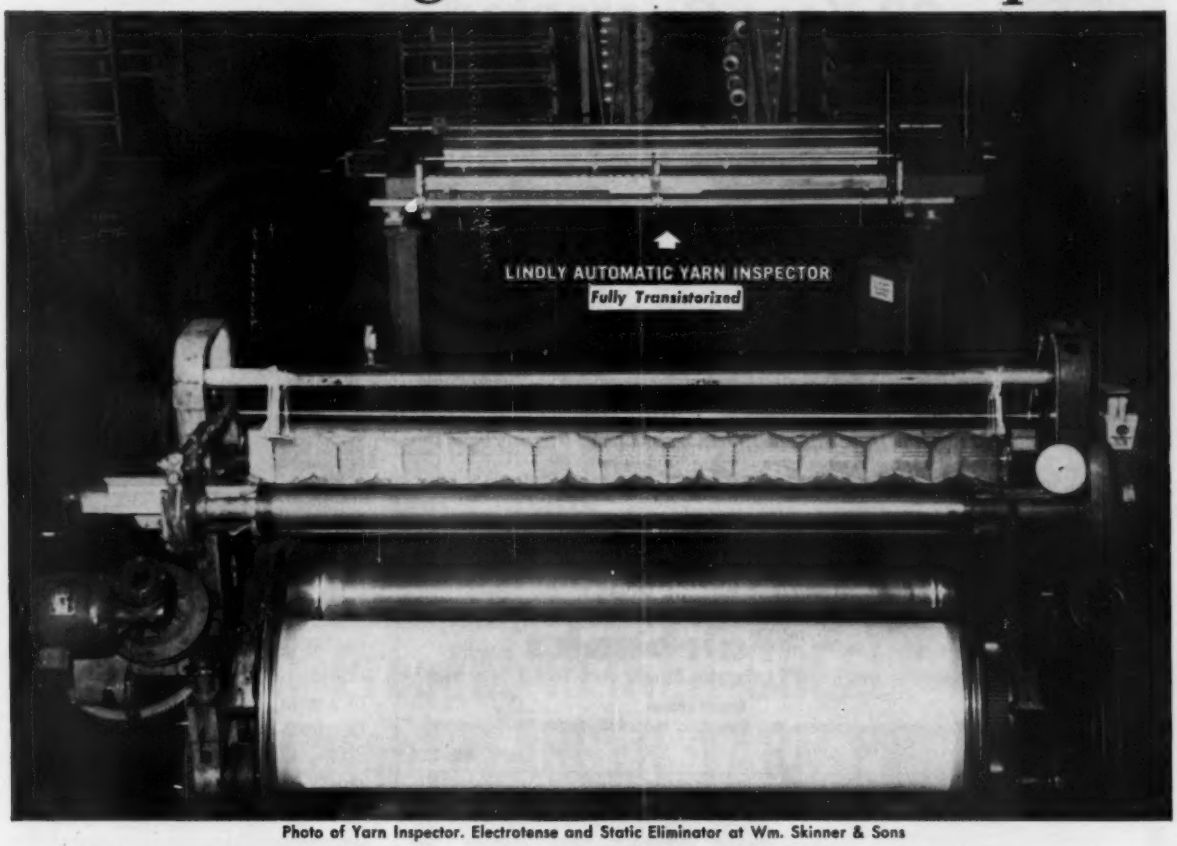
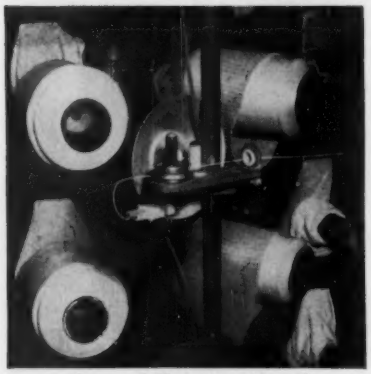


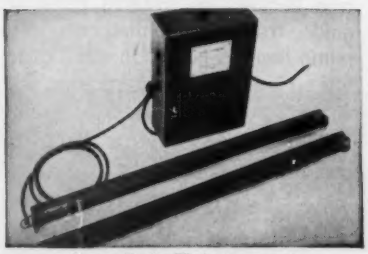
Photo of Yarn Inspector, Electrotense and Static Eliminator at Wm. Skinner & Sons

The LINDLY Electronic Triumvirate Gets the Credit

YARN INSPECTOR – ELECTROTENSE – STATIC ELIMINATOR



Closeup of Electrotense in creel.



Lance Static Eliminator — not visible in installation photo.

When we asked William Skinner & Sons, Holyoke, Mass. for a report on their installation of a Lindly Automatic Warp Yarn Inspector, the Lindy Electrotense in their creel and a Lindy Static Eliminator, their answer was prompt and enthusiastic: "No more tight ends in our warps."

However, when we asked them to go back temporarily to warping without the Lindly controls, so we could get some comparative "before" data, they flatly refused. "Why should we go through that again, when we don't have to?" they asked, and we can't blame them.

Since Skinner didn't need comparative data to prove the value of the Lindly Electronic Triumvirate, we doubt if you would either. So why not try an installation? Here's what the triumvirate is and does:

THE LINDLY AUTOMATIC YARN INSPECTOR is a high-speed, ultra sensitive photo-electric instrument for detecting yarn defects in warps, such as broken filaments, strip-backs and fluff balls. It can be made to operate a counter, a signalling device, or to actuate a machine stop switch — singly or in combination for any degree of imperfection.

THE LINDLY ELECTROTENSE for warp creels, winders, twisters, knitting machines, etc. provides completely uniform tension for any number of ends and the tension for all ends can be varied by turning only **one** dial. It consists of two conventional discs with an electromagnetic coil beneath. The lower disc is of non-magnetic brass, while the upper disc is of magnetic iron. When the coil is energized through a central electronic control, the upper disc is attracted downward, pressing the yarn between it and the lower disc in any degree desired. The pressure is pulsating, which prevents backup of twist and helps keep the tension discs clean and free turning.

LANCE STATIC ELIMINATOR, made in a variety of models, has a textile application wherever static electricity is a problem. It carries a high voltage discharge from pointed electrodes into the air, causing the fibre to be surrounded by ionized air, which serves to discharge the static electricity accumulated all around the surface of the fibre. Whereas the voltage is high enough to ionize effectively the air, it cannot harm the operator, who accidentally comes in contact with the electrodes.

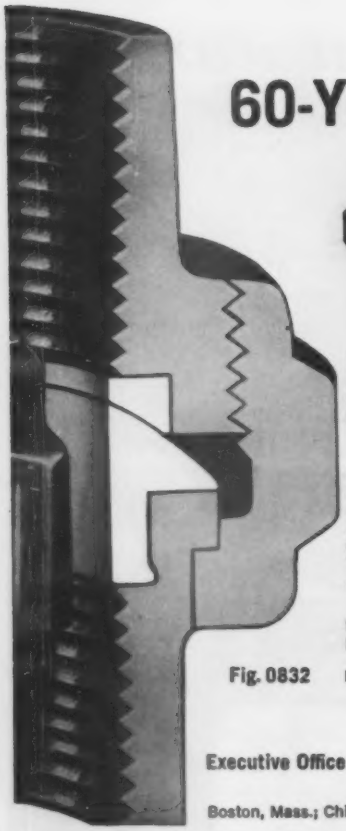
FOSTER MACHINE COMPANY

ELECTRONIC SALES DIVISION, DEPARTMENT TW-11

Westfield, Massachusetts, U.S.A.

Southern Office, Johnston Bldg., Charlotte, N. C.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 173



60-Year Guarantee Backs Dart Unions

For over 60 years every Dart Union has been backed by the firm GUARANTEE that "if one should leak through, we will give you two". Less than 1 in every 100,000 has proven faulty.

The extra wide bronze seats, ground on specially designed machines to a true ball and socket joint, are swaged under heavy pressure into air-refined malleable iron bodies. They come apart readily and remake repeatedly without excessive wrenching — without jamming. They are the reason that Darts may be used over and over again.

Sizes: ⅛" thru 4 inches
Pressure ratings: ⅛"-2"— 300 S.W.P., 600 W.O.G.
2½"-4"— 250 S.W.P., 600 W.O.G.

Fig. 0832 **Darts also available in the all-iron construction.**

THE **Fairbanks** COMPANY
Executive Office: 393 Lafayette Street, New York 3, New York
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Boston, Mass.; Chicago, Ill.; New York, N.Y.; Pittsburgh, Pa.; Rome, Ga.

ADV. NO. 259

STORAGE COSTS CUT SHARPLY

with famous
STURDI-BILT
Adjustable Storage Racks

What you see here is the *modern* way to store and handle loom yarn beams. And the "heart" of this system is STURDI-BILT adjustable storage racks. Engineered for strength, safety and savings, STURDI-BILT Racks are now in use by more and more leading textile mills. Learn how you, too, can save with STURDI-BILT. Send for free STORAGE PLANNING GUIDE, along with case history photos of textile installations.

NEW: Ask about our unique "pay-as-you-save" TIME PAYMENT PLAN.

For FREE details write:
STURDI-BILT
Material Handling Division, Dept. TW-1161
Union Asbestos and Rubber Company
332 South Michigan Avenue
Chicago 4, Illinois

Let this symbol be your guide

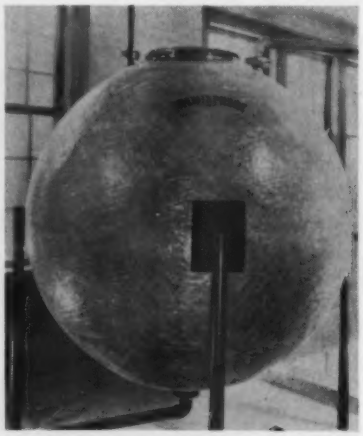
STURDI BILT
Racks the goods of the world

ADV. NO. 260

Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.



E-31—Spherical tank, made from glass-reinforced polyester, is used for processing or storing corrosive liquids. Its weight is one-seventh of a comparable stainless-steel tank. It comes in 6-ft. (847 gallons) and 8-ft. (2009 gallons) diameters. Harry W. Smith, Inc.

E-32—Metering pump can be disassembled easily and the parts sterilized because its internal parts are made from insert materials. The pump handles liquids in small quantities. Comes in four capacities: 0 to 2, 0 to 5, 0 to 10, and 0 to 20 milliliters per minute. You simply set the control to the flow rate required. Dial is graduated in 1/1000 milliliters per minute. Beckman Instruments, Inc.

. . . *Turn to page 176*

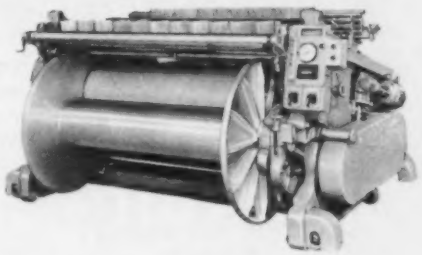
Adapt Your Present REINER CREELS to Latest, LARGER YARN PACKAGES!

Take advantage of this time and money-saving offer!

If you have an older model Reiner Creel — you can readily adapt it to accommodate the recently introduced larger yarn packages. The change-over cost is small — and you save as much as 50% on creeling labor alone. Fast delivery of conversion parts is guaranteed — and we welcome the opportunity to submit an estimate.

If your need is for a new, late-model Creel — look to Reiner for the best in Magazine, Single-type, Truck, Special Duty and Rotoset type, Bobbin Swing Rack. Suitable for all yarn packages, trom coarsest to finest yarns, Reiner Creels are available with mercury contact, electrical drop lever and loom type (drop heddle) stop motion, balloon control, variable pin disc tensions — and many other features. Small creels of 40 - 60 - 100 ends are available for narrow fabric weavers.

Reiner Warpers and Creels can readily be used with any warp knit equipment.



Shown — REINER HD-BEAMER up to 44" flange diameter.

REINER BEAMERS AND WARPERS are of rugged construction — able to withstand the highest speed and heaviest use.

Sectional Warpers available up to 84" in length with flange diameters up to 44".

Many patented features insure ease of handling, safety, and above all — quality warps.

For further details ask for our Warper or Creel catalogs.

ROBERT REINER, INCORPORATED

550-564 GREGORY AVENUE

Telephone: UNion 7-0502 — From New York City call LOngacre 4-6882

WEEHAWKEN (Only 10 minutes from Times Square by direct bus) NEW JERSEY

AN HONORED NAME IN TEXTILE MACHINES SINCE 1903

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 175

relaxed drying for broad wovens

the REELAX-JET

ADJUSTED OVERFEED—Cloth speed precisely regulated.

CONVEYING SYSTEM—Air pervious reels transport and support fabric.

CONTROLLED TEMPERATURE—Gas fired or steam heated . . . ideal for curing.

AIR DRYING—Fabric surface uniformly exposed to high velocity heated air.

PRE-FAB CONSTRUCTION—Factory assembled sections quickly erected or added to existing installations.

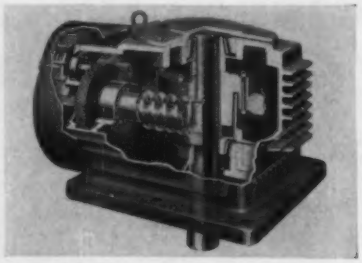
TUBE-TEX is fully covered by patents issued and pending. All patents controlled by

tubular textile machinery corporation

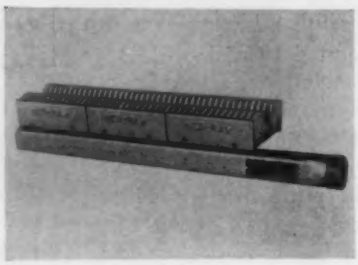
33-61 54th STREET, WOODSIDE, NEW YORK

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

E-33—Cleaner mixes with cold water to remove grease, gums, and oil. Called PC-5, it is nontoxic, odorless, nonflammable, and harmless to the skin. You mix this concentrate with 10 parts of water (even salt water). Davis Emergency Equipment Co.



E-34—Speed reducer features helical and worm gear double-reduction combination. It's available with output shaft extending upward or downward. The gears run in a large oil bath for maximum lubrication and cooling. Ratios: 35:1 to 250:1. Ratings fractional to 60 horsepower. Aluminum and plastic fans located on the high-speed pinion cool the housing. Cleveland Worm & Gear Div.

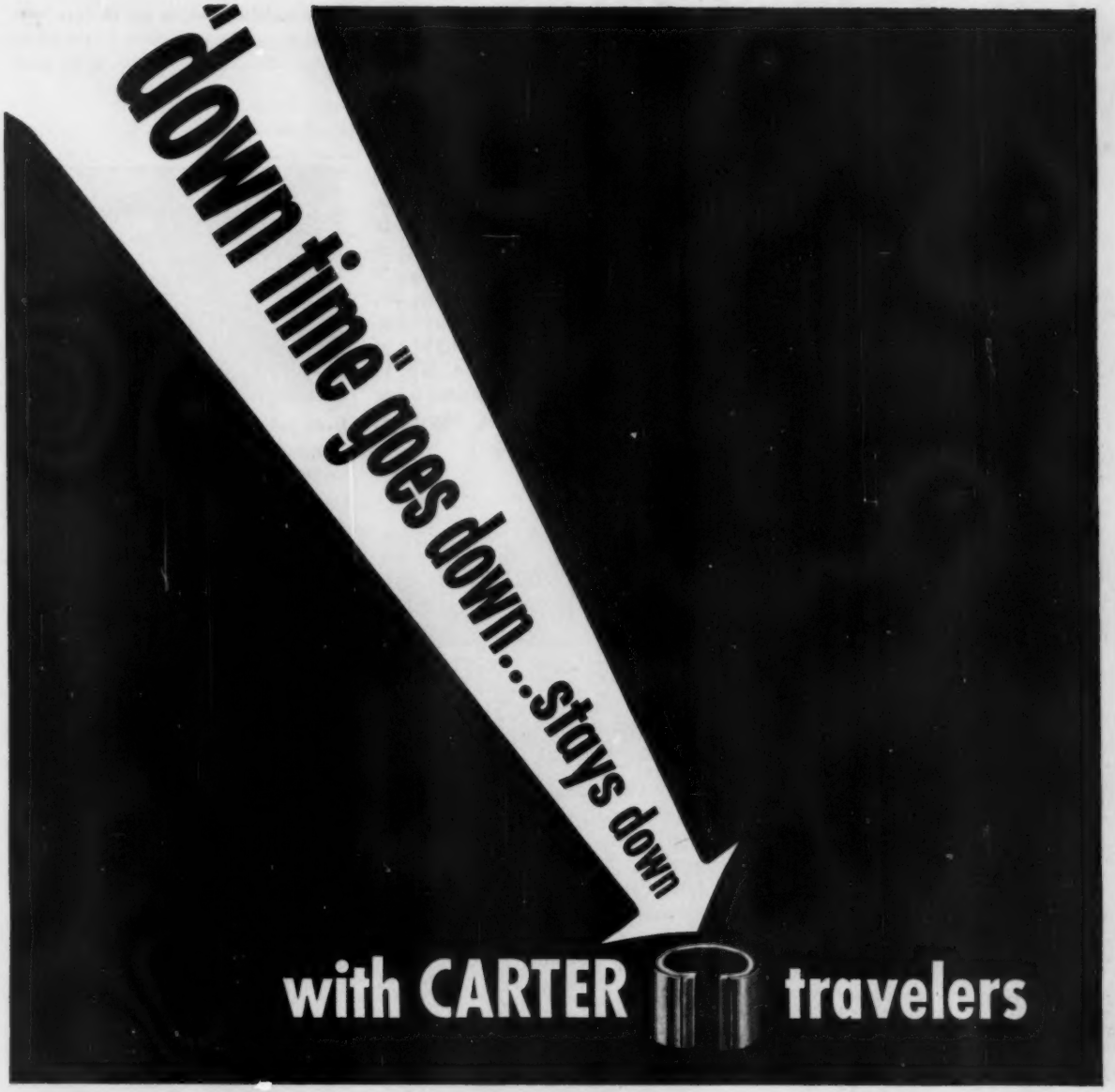


E-35—Infrared gas burner, Type K, produces most of its radiation above 2.7 microns. It comes in 2½, 4½, and 7-in. lengths that you can mount on a common manifold for lengths up to 100 feet. The burner is 6⅝ inches wide. With multiple installation each one can be adjusted individually to vary the heat across the width of a web. Throttling capacity: 10 to 1. Red-Ray Mfg. Co., Inc.

E-36—Pressure regulator, called Banti-Reg, is bantam size—$1\frac{7}{16}$ x 2¼ inches. It's all brass with a neoprene diaphragm. You can use it for gases or fluids that are not affected by brass or neoprene. Input pressure goes to 400 psi. with regulation of 5 to 125 psi. Standard parts are ¼-in. N.P.T., but ⅛-in. N.P.T. connections are available. Maximum operating temperature: 200 F. Wilkerson Corp.

E-37—Battery charger works on 12-, 24- or 36-v. lead-acid batteries for light-duty trucks. It uses any 115-v. a.c. source. Standard accessories include: ammeter, timer, fused circuit, and fan for cooling. Exide Industrial Div., Electric Storage Battery Co.

. . . *Turn to page 178*



When you specify CARTER TRAVELERS you insure smooth, trouble-free spinning and twisting regardless of yarn count or spindle speeds.

Why? Because precision engineering — skilled craftsmen working with modern machinery — plus scientific laboratory quality control give you a product that cuts worry-time to a minimum . . . increases smooth running time.

Sold and serviced by a team of *specialists*, CARTER TRAVELERS help you make and sell a better product at a better profit.

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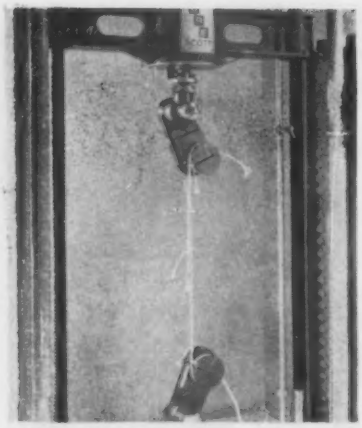
Carter
TRAVELER COMPANY

DIVISION OF A.B. CARTER, INC. MANUFACTURERS OF THE BOYCE WEAVERS KNOTTER GASTONIA, NORTH CAROLINA

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 177

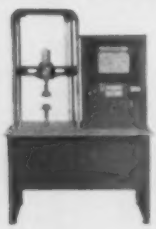


Does your
REPUTATION FOR QUALITY
hang by a thread?

Without destructive testing, quality assurance is often an empty promise. It involves risks few manufacturers can afford to take. Repeated failures to meet customers' specs because of theoretical guesses do two-fold damage. They not only incur costly returned-goods losses but rip a reputation to shreds.

With a Scott CRE Tester, quality assurance assumes pictorial form . . . an accurate stress-strain profile . . . as shown in the chart of a three-ply cord test at the right. The U. S. Air Force insists on such tests on parachute shroud lines. Wouldn't similar materials testing procedures, aggressively promoted, guard and enhance your reputation for quality?

Material testing accuracy reaches the top with a Scott CRE Tester on the job. This all-purpose Constant-Rate-of-Extension tester employs advanced electronic weighing techniques to pen the complete stress-strain history in permanent, easily understood form. It leaves no room for doubt.



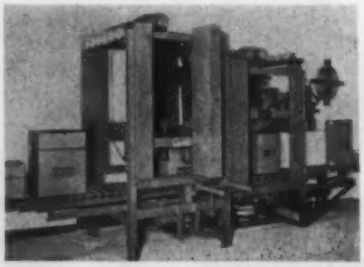
Whatever your material . . . thread, cord, twine, yarn, cloth, duck, webbing or tape . . . the Scott CRE meets all your testing requirements. It utilizes all the Scott interchangeable clamps, and fixtures designed to meet ASTM, ISO, Government and Industry Test Methods.

Bulletin CRE tells the whole story. Write for your copy today. Scott Testers, Inc., 95 Blackstone St., Providence 1, R. I. Tel. DExter 1-5650 (Area Code 401).

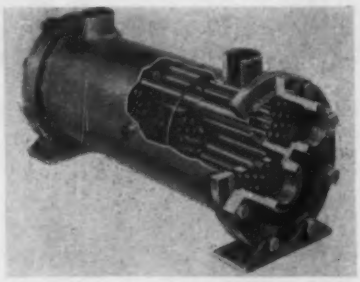
SCOTT TESTERS

THE SURE TEST . . . SCOTT!

E-38—Test gage, for on-the-spot pressure checks, is portable. The 1-lb. unit comes with a friction-fit protective cover. It's available in pressure ranges from 0 to 30 and 0 to 1,000 psi. You can test air, steam, liquids, or gases that are non-corrosive. Accuracy is 0.5% of the scale. It uses a ¼-in. N.P.T. connection. Also available are gages for oxygen service. Manning, Maxwell & Moore, Inc.



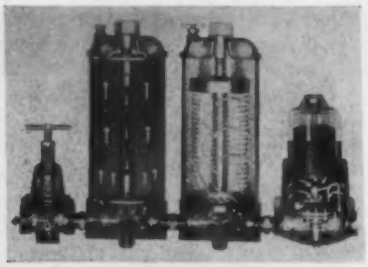
E-39—Carton sealer handles intermixed cases from 3 to 49 inches in height and in varying widths and lengths. It closes top and bottom in one continuous operation without manual flap closing. Daily production: over 1,000 cases. General Corrugated Machinery Co.



E-40—Heat exchanger, type 500, heats or cools engines, compressors, turbines, and hydraulic equipment. Size varies with shell diameters ranging from 3¼ to 8¼ inches and lengths from 16¾ to 79 inches. Three designs are available—one-, two- and four-pass models. It has a steel shell (withstands 300 psig.) and brass-clad, steel tubes (150 psig.) Temperature range: 300 F. Basco, Inc.

E-41—Vacuum gage has a self-contained miniaturized circuit for smaller panel mountings. Unit comes in three ranges—0.2 through 20 microns Hg. Also available are built-in switching attachments for monitoring of five positions. Matched interchangeable gage tubes (color coded for each pressure range) have a built-in rate-of-change for ambient temperature compensation. Hastings-Raydist, Inc.

E-42—Flange bearing has a spherical bore for self-alignment of the bearing. It is sealed for life—doesn't require lubrication. A self-locking eccentric collar locks the bearing to the shaft. Sizes: ½ to $1\frac{7}{8}$-in. shaft diameters. T. B. Wood's Sons Co.



E-43—Air dehydrator removes oil and dirt from compressed air. The first stage removes oil to 2 ppm. and the second stage takes out dirt particles as small as 3 microns and removes oil fumes. You need no electrical or water connections. The unit uses a desiccant that changes color to indicate when a replacement is needed. A regulator on the outlet controls air pressure. Wilkerson Corp.

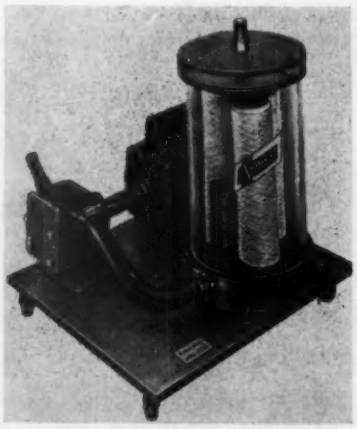
. . . *Turn to page 179*

Equipment & Supply News

. . . *Begins on page 151*

For more information on any of these items, write the appropriate number on the Reader Service Card, next to the back cover.

E-44—Single-stage suction pump, fractional-horsepower type, handles noncorrosive liquids at temperatures up to 180 F. Capacities range up to 48 gpm., with heads to 100 feet. The cast-iron pump has enclosed impellers and screwed connections. You can install it vertically or horizontally by bolting the motor feet to a suitable support. Horsepower ratings range from ⅓ to 1. Allis-Chalmers Mfg. Co.



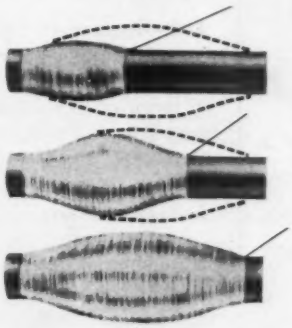
E-45—Filter is constructed of all plastic for use with acid and alkali solutions. It eliminates leakage and metal contact by the liquid. The self-priming filter has a lucite chamber. Filter tubes are cotton or Dynel wound on polypropylene cores. Capacities range from 25 to 1,200 gpm. Unit removes particles down to 1 micron. Also available: Porous carbon or stone filters. Sethco Mfg. Corp.

E-46—Fluorescent fixture, called Stylus, can be surface mounted in either individual- or continuous-row patterns. The totally enclosed unit has a wrap-around plastic lens for shielding. Installation is easy because the top plate fits flat against the ceiling. You can remove the lens from either end for relamping. The unit uses two 40-w. rapid-start lamps. The new lens reduces glare. Sylvania Electric Products, Inc.

NEW **FLETCHER**

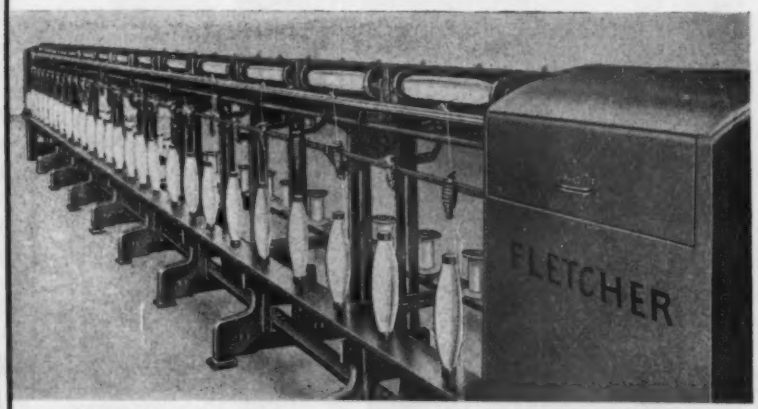
FILLING WIND REDRAW

WINDS PIRN PACKAGE
WITH CONTINUOUS
TENSION-FREE DELIVERY



Exclusive new method of yarn build-up eliminates tug and pull

Not only provides you with a perfectly controlled package, but eliminates need for coning — and winds at double the speed of a coner.



For high speed winding of Nylon, Glass and all Synthetics

Look for features never expected from a redraw machine. Perfect wound bobbins at high speeds—500 to 750 rpm per 2-pound bobbin . . . filling wind pirn package . . . standard pirn package . . . bottle bobbin and straight bobbin.

TRY BEFORE YOU BUY with 3-month trial rental plan

Get proof before you pay by evaluating these machines in your own plant. They are available for delivery, completely assembled. See them in operation in the Fletcher Industries Showrooms in Cheltenham (Philadelphia), Pa.

FLETCHER INDUSTRIES

Hasbrook Ave. and Beecher St., Cheltenham (Suburban Phila.), Pa.

FLETCHER SOUTHERN
SOUTHERN PINES, N. C.

FLETCHER INDUSTRIES
STATESVILLE, N. C.

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 179

DURANT

MODEL "T"
LINEAL COUNTER

furnished with
MOUNTING BRACKET
for **CONSTANT ACCURACY**
and perfect alignment of measuring wheels

Even at high speeds, the Durant Model "T" lineal measuring machine will accurately measure fabrics in feet, yards, or yards and ⅛ths. Two wide, 18-inch measuring wheels assure accurate measuring and longer life. The hinged and swiveled bracket allows wheels to ride perfectly flat on the material at all times.

- **Easy to Read and Operate** — The counter may be set to turn either clockwise or anti-clockwise, and will subtract when run in reverse. Bold, black figures are large and easy to read; fractional wheel numbers are in red. An easy to reach reset knob returns figures to zero with one turn.
- **Fast, Easy Mounting** — The mounting bracket, which is exclusive with Durant lineal counters, is furnished to provide quick and completely accurate mounting that will assure perfect measuring. A locking collar on the horizontal shaft allows the machine to be raised from the material when not in use.
- **Sturdy, Long Life Instrument** — All components of the Durant counter are of the highest grade materials to assure years of accurate service under the hardest working conditions. The heavy duty stainless steel 5/16" drive shaft is mounted on high grade ball bearings; large measuring wheels can be cast iron or aluminum, knurled or rubber rimmed; all parts of the counting mechanism are of the strongest, long wearing materials.

Send for catalog specifications of the entire Durant line of lineal counters.

DURANT
MANUFACTURING COMPANY

1931 N. Buffum St. Milwaukee 1, Wis. | 31 Thurbers Ave. Providence 5, R. I.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

TEXTILE WORLD . . . New Literature

For your free copy and more information on these bulletins, write the item number on Reader Service Card, next to the back cover.

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

L-1—Expanders. Their uses in coating operations are discussed in Technical Sheet 7. Diagrams show 4 types of applications, depending on type and severity of problem. Mount Hope Machinery Co.

L-2—Batch ovens. Bulletin 1961 contains illustrations and complete specifications of many types. Optional features are listed. Discusses applications and advantages. Blue M Electric Co.

L-3—Replacement loom parts. Four main divisions of loom parts plus a supplies section for all loom models are included in this catalog. Shows drawings of loom motions and parts. H. F. Livermore Corp.

L-4—Self-centering rolls. Their theory of operation is described and illustrated in Brochure ADUCO 78019-61. Includes data on variations and applications to many industries. U. S. Steel Corp.

L-5—Infrared equipment. Photos show 18 different oven installations. Bulletin 31361 includes technical graphs for particular heating conditions. Lists advantages. Fannon Products Div., Hupp Corp.

CHEMICALS & SUPPLIES

L-6—Textile softeners. Three types are described in Technical Bulletin 407B. Includes 16 pages of data on properties, test procedures, applications, and performance evaluations. Emery Industries, Inc.

L-7—Dacron bonding agents. Text covers properties, preparation, drying, and curing. Bulletin D-138 lists suggested bonding agents. Explains how to control fiber-fill batting. E. I. du Pont de Nemours & Co.

L-8—Organic acids and anhydrides. Their properties and uses are discussed in 48-p. Booklet RF-40255A. Constant boiling mixtures and specification limits are covered. Union Carbide International Co.

L-9—Water treatment. Its application for boilers is explained in 24-p. Bulletin 30. Ninety-four questions and answers are listed. Discusses removal of impurities. Nalco Chemical Co.

L-10—Polymers, resins, and latices. Product Directory lists a brief description, physical properties, packaging units, and possible applications of 100 products. Goodyear Tire & Rubber Co.

ENGINEERING

L-11—Exchangers. Dimensions for single and 2-pass models are listed for all sizes. Cutaway diagrams reveal parts in Bulletin O-1162. Includes data on materials, design pressure, temperature. Basco, Inc.

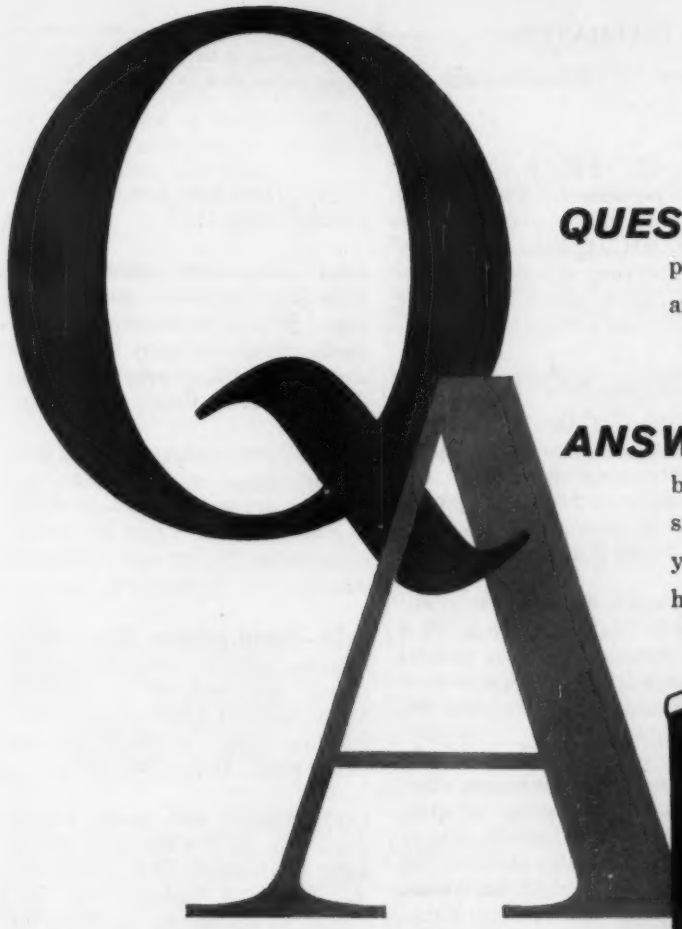
L-12—Rotary valves. Bulletin N-261 details construction features of two models. Diagrams and charts illustrate dimensions. Includes application photos. Three-hole punched. Day Co.

L-13—Flexible connectors. Bulletin 26 illustrates 5 types. Contains data on installation, use, and stock fittings. Lists specifications and working-pressure correction factors. Atlantic Metal Hose Co., Inc.

L-14—Magnets. Three styles are described and illustrated in 2-color Bulletin 1032. Features are outlined. Fill-in blanks of pertinent data make ordering easy. Stearns Magnetic Products.

L-15—Rod ends and bearings. Seven types of rod ends are illustrated. Charts list their dimensions in Catalog 102. Ten bearings are pictured and described. Split Ballbearing, Division of MPB, Inc.

. . . *Turn to page 182*



QUESTIONS about starch are always popping up in textile plants of every type and size. Why try to solve them alone?

ANSWERS to starching problems have been the stock-in-trade of every Keever sales-service man for more than 60 years. Why not let *the weaver's friend* help you?

there is no substitute for UNIFORMITY and KEEVER SERVICE

VICTOR MILL STARCH

TEXTILE SALES DIVISION
118 South Pleasantburg Drive
Greenville, South Carolina

THE KEEVER STARCH COMPANY

GENERAL OFFICES COLUMBUS 15, OHIO

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 181

PSC Vari-Pitch®
ROVING FRAME BUILDER
Improves Roving
Improves Spinning

PSC VARI-PITCH ROVING BUILDER improves running conditions and increases the effective volume of the roving package.

IMPROVES ROVING
- Less tangled bobbins
- Less break-backs
- Reduces creeling time

IMPROVES SPINNING
- Lower ends down count
- Longer runs
- Less stuffing-off in handling
- More yardage on bobbin

Fits Whitin and Saco-Lowell roving frames.

LARGER PACKAGE
The effective lead or pitch of the Vari-Pitch screw increases as additional layers of roving are placed on the bobbin, causing the length of stroke to decrease at a rate greater than that of the bobbin diameter. This feature produces a CONVEX TAPER of the bobbin that will add additional weight to the package and give you longer runs per bobbin. The LARGER PACKAGE will also reduce creeling time. You will have less waste by having fewer pieces.

INTERCHANGEABLE
The Vari-Pitch Builder is interchangeable with all types and makes of American made roving frames.

COMPLETE UNIT
The new Vari-Pitch Builder Assembly is a complete unit and includes a new square shaft and universal joint.

EASY INSTALLATION
Remove the old builder (one bolt Whitin —two bolts Saco-Lowell). Replace with the PSC Builder, first sliding the new square shaft into the builder rod gear, and then bolting the builder securely to the frame.

Shipped from stock. Ask for Bulletin 320.

COMPANION ROVING FRAME UNITS
COMPOUNDS
CHAIN DRIVES
BALL BEARING UNITS (all types)
GEAR—skip, worm, bevel
WEIGHT CHAIN PULLEYS
. . . and many other patented LABOR and TIME-SAVING devices.

In most every Textile Mill you will find PRECISION textile machine applications on all types and makes of machinery from OPENING through SPINNING.
- increase package quality
- improve running conditions
- save valuable man-hours
- cut operating costs

A PRECISION sales engineer will be glad to assist you and point-up modernization advantages and make recommendations.

PRECISION GEAR *Division*
PERFECTING SERVICE CO.
332 Atando Avenue, Charlotte, N. C.

NEW LITERATURE

Begins on page 180

For your free copy and more information on these bulletins, write the item number on Reader Service Card, next to the back cover.

L-16—Transducers. Drawings of models and their applications supplement text. Bulletin 200-A includes operating details and specifications in 4 pages. Three-hole punched. Louis Allis Co.

MATERIAL HANDLING

L-17—Shipping tips. This 16-p. booklet includes chapters on safety, savings, product protection, and proper maintenance of equipment. Contains a section on new techniques. Better Packages, Inc.

L-18—Electric walkie trucks. Bulletin SS-870 lists specifications for 9 trucks. Explains 16 safety features built into trucks where highly combustible materials are present. Clark Equipment Co.

L-19—Corrugated packaging. This 7-p. booklet is comprised of questions and answers. Includes data on sealing tapes, shipping methods, displays, size and weight limitations. West Virginia Pulp & Paper Co.

L-20—Air-powered equipment. Its uses in materials dispensing applications are explained in Catalog 42. Gives specifications for units and accessories. Includes many action photos. Lincoln Engineering Co.

ELECTRICAL

L-21—Limit switch. Drawings show applications including sorting, counting, inspecting, and limiting machine travel. Bulletin GEA-7318 contains specifications and operating data. General Electric Co.

L-22—Power rectifiers. Photos illustrate equipment. Text covers specifications, various models, and optional features. Includes rectifiers for every a.c. to d.c. application. The Meaker Co.

MOTORS & DRIVES

L-23—Speed changers. Text and photos point out design features in Bulletin 51B9061B. Their many applications are discussed and illustrated. Three-hole punched. Allis-Chalmers Mfg. Co.

L-24 — Adjustable-speed drives. Bulletin GEA-6999 contains 32 pages of product descriptions, applications, and selection factors. Includes a price-comparison table. General Electric Co.

L-25—Power packages. Units containing pump, motor, valving and reservoir are pictured and described in Bulletin 61-82. Chart lists model explanation. Design and installation data covered. Vickers Inc.

L-26—Speed reducer. Dimensions, weights, prices, and horsepower ratings are featured in Bulletin 602A. Table of V-Belt drives makes selection easy. Detailed drawing shows parts. Dodge Mfg. Corp.

L-27—Motors and speed drives. Their uses in processing industries such as chemical and textile are the subject of Bulletin 113. Describes all equipment. Includes 10 application photos. Louis Allis Co.

L-28—Suction pump. Leaflet 52B-1010 briefly describes construction and installation. Performance curves, dimensions, and prices are included. Labeled diagram shows parts. Allis-Chalmers Mfg. Co.

L-29—Reciprocating, rotary, and centrifugal pumps. Operating principles, service, and applications are explained for nontechnical readers. Photos and diagrams included in Bulletin 5773-J. Goulds Pumps, Inc.

L-30—Centrifugal pumps. Cross-sectional photos show parts. Bulletin 105C has selection and limitation charts and dimensional data. Includes engineers' and architects' specifications. Aurora Pump Div.

L-31—Centrifugal pump. Many charts, diagrams, and photos supplement the text. Specifications, design features, and construction details are covered in Bulletin 725.1 Goulds Pumps, Inc.

L-32—Vacuum pumps, gas boosters, and air motors. Catalog 561 describes these items. Construction and dimensional data, capacities, and performance curves are included. Leiman Bros., Inc.

GENERAL

L-33—Industrial waste. Its treatment by acid neutralization is described in Bulletin 3-Sic3700.22-1. Includes 16 pages of tables, flow charts, diagrams, and illustrations. B-I-F Industries.

L-34—Microscope accessories. Catalog in 36 pages describes screening, evaporation, and general uses. Lists over 1,000 types plus a complete price list. Fully illustrated. Ernest F. Fullman, Inc.

L-35—Brush construction. This catalog is completely illustrated with 14 pages of cross-sectional drawings. Includes all types of brushes for industrial applications. M. W. Jenkins' Sons, Inc.

L-36—Chain lubrication. Methods of chain oiling are presented in 8-p. Bulletin 1800. Applications and installations are illustrated. Contains a section on cleaning. Oil-Rite Corp.

L-37—Sewage-treatment plants. Bulletin 7330 illustrates and describes operating features and installation practices. Contains specification charts. Photos point out applications. Dorr-Oliver Inc.

L-38—Recorders. Mechanical and electrical models are described. Diagrams picture installation. Catalog 10A contains time-wasting charts. Electrical accessories outlined in text. The Service Recorder Co.

Available

Full-size nomographs to determine cotton blend fineness in a hurry ("Short Cut to Better Blending for Cotton," TEXTILE WORLD, August 1961, p. 70) are available on request from Southern Regional Research Laboratory, U. S. Department of Agriculture, New Orleans 19, La.

TEXTILE WORLD . . .

Calendar

November

Packaging Machinery Manufacturers Institute Show, Cobo Hall, Detroit, Nov. 7 to 10

National Cotton Council of America, Chemical Finishing Conference, Washington, D. C., Nov. 8 & 9

Southern Textile Association, Piedmont Div., Johnston Memorial Y.M.C.A., Charlotte, N. C., Nov. 9

Thread Institute, annual meeting, Hotel Commodore, New York, Nov. 9

Narrow Fabrics Institute, Inc., fall meeting, Statler Hilton, New York, Nov. 13 & 14

Exposition of Chemical Industries, Coliseum, New York, Nov. 27 to Dec. 1

AATT, Piedmont Section, dinner meeting, Charlotte, N. C., Nov. 30

December

AATT, New York Section, monthly meeting, Della Robbia Room, Hotel Manger-Vanderbilt, New York, Dec. 6

National Association of Manufacturers, Annual Congress of American Industry meeting, Waldorf-Astoria Hotel, New York, Dec. 6 to 8

AATCC, Northern New England Section, Motel 128, Dedham, Mass., Dec. 18

1962

January

National Cotton Council, Cotton Research Clinic, The Carolina Hotel, Pinehurst, N. C., Jan. 11 & 12

National Cotton Council, 24th annual meeting, New Orleans, Jan. 29 & 30

February

AATT, annual conference, Hotel Commodore, New York, Feb. 7

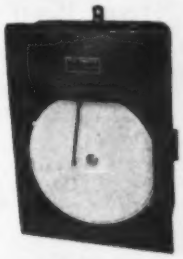
American Society for Quality Control, Textile and Needle Trades Div., annual conference, Clemson House, Clemson, S. C., Feb. 15 & 16

March

Southern Cotton Association, annual convention, Hotel Peabody, Memphis, Tenn., March 28 to 30

American Cotton Manufacturers Institute, annual meeting, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 29 to 31

FOR MAXIMUM WEAVING EFFICIENCY
Use NORCROSS VISCOMETERS



The correct viscosity is of utmost importance in preparing warps for maximum weaving efficiency since viscosity is a measure of size pickup. Oversizing causes excessive fly, decreases efficiency and is very wasteful. Undersizing produces soft warps.

A complete Viscosity Record of the size in the box where it is applied to the warp provides the very best quality control.

Benefits from Viscometer

1. Shows any error made in mixing the size.
2. Provides a check on the operation of the cooking controls.
3. Shows variations in the chemical composition or moisture content of the raw materials with different shipments.
4. Detects the effect of excessive condensate from steam used to heat the size box.
5. Indicates breakdown caused by excessive agitation or holding size too long in the box.
6. Detects faulty operation of the size box level or temperature controls.
7. Immediately shows all viscosity changes so that corrections can be made before any warps are improperly sized.

Features of NORCROSS VISCOMETER

Proven: Nearly two decades experience in textile mills. The only proven Recording Viscometer for warp sizing.
Easy to install: Quickly and easily installed on any size box or storage kettle.
Easy to Use: The viscosity is automatically recorded on a 24 hour chart providing a complete record for all sizing applied to warps.
Alarms available: High and Low alarms are available to signal whenever the viscosity exceeds or falls below pre-set limits.
Self-cleaning in operation: Normal up-and-down piston action provides continuous self-cleaning of sensing parts during operation.
Rugged and Dependable: The patented falling piston principle permits the design of a simple and dependable instrument easily serviced by any maintenance department.
Reasonably priced: Write for quotation and list of users.

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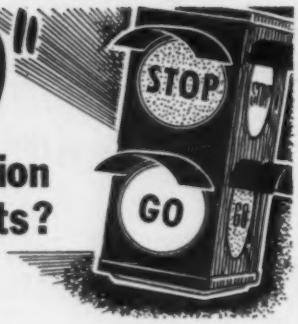
Southern Agent
Garrett S. Parker & Associates
P. O. Box 11675 - Atlanta 5, Georgia
Tel. CE 7-4982

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 183

IS

"STOP and GO" Production Robbing You of Profits?



"Stop-and-go" production of cloth is costly . . . and unnecessary when the stoppages are due to the fabric guiders. No two fabrics can be handled exactly alike. But you can eliminate a lot of time and expense by installing

MECHO AIR GUIDERS

With Mecho on the job, you can quickly adjust for the lightest fabric or #8 duck *while in operation*. Once set, it will maintain constant cloth alignment and guide within 1/8 inch. It can't spatter or turn a double edge . . . and there are no weights or levers to fuss with. No repair problems, either.

Write today for this helpful FREE Mecho Air Guider Catalog.

THE Guider SPECIALTY COMPANY

372 State Street, North Haven, Connecticut
Southern Representatives:
McSpadden, Scantland and Hunter, P.O. Box 3635, Charlotte 3, N. C.

ADV. NO. 261

GREATER PROTECTION to your AIR LINE!

M-B

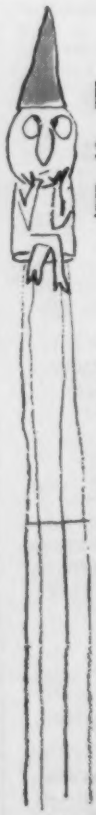
AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 *and* TRAP

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

M·B PRODUCTS
46 VICTOR AVE., Div. 11
DETROIT 3, MICHIGAN

ADV. NO. 262



Have you stopped learning?

A British statesman, it is said, read Gibbons "Decline and Fall of the Roman Empire" while waiting for his wife to dress for dinner.

Once a man feels the urgency to learn, it's remarkable how he finds the time and place to do it.

If he had to spend countless hours seeking out that which would be most useful in his work, the going might be rough. But, happily, this herculean task has already been accomplished by McGraw-Hill specialized magazines that span almost every field and function.

Your very own publication, for instance, that you are reading right now. Read it inquisitively. Read it imaginatively. Pass it along to your fellows, tell them how much they can get out of it, too . . .

Men who read more . . . earn more!

TEXTILE WORLD . . .

Advertisers' Literature

To get items you want offered in the advertisements in this issue, just write in the numbers on Reader Service Card next to the back cover. If all bulletins listed under one number are not required, please write on card the name of bulletin desired.

A-350—Fabric guide. A free catalog is available on these air guides. Guider Specialty Co.

A-351—Pneumatic lap-control systems. Illustrated brochure is yours on request. Livingston & Haven, Inc.

A-352—Testing ovens. For complete information send for Bulletin 203-7GR. Despatch Oven Co.

A-353—Adjustable storage racks. For information send for "Storage Planning Guide." Sturdi-Bilt, Material Handling Div., TW-1161.

A-354—Rotary-pressure joints. Catalog S-3002 gives complete details. Johnson Corp.

A-355—Variable-speed drives. For information write for Bulletin 6102. T. B. Wood's Sons Co.

A-356—Traveling cleaner. Illustrated Bulletin 21A on request. Bahnson Co.

A-357—Resins. Write for 12-p. Piccopale Emulsion catalog. Pennsylvania Industrial Chemical Corp.

A-358—Scales. Request Bulletin 2017 showing printed weight records. Toledo Scale Div., Toledo Scale Corp.

A-359—Dryers. Send for Bulletin D-400. Andrews & Goodrich Div.

A-360—Nonwoven equipment. For more information send for Fiber/Locker Bulletin C. Jas. Hunter Machine Co.

A-361—Textile machines. Descriptive sheets on fiber preparatory equipment on request. Carolina Machinery Co.

A-362—Overhead tramrails. Guide on overhead materials handling is available on request. Cleveland Tramrail Div., Cleveland Crane & Engrg. Co.

A-363—Lineal counters. Catalog specifications on entire line sent on request. Durant Mfg. Co.

A-364—Creels. For complete details send for Warper or Creel Catalogs. R. Reiner, Inc.

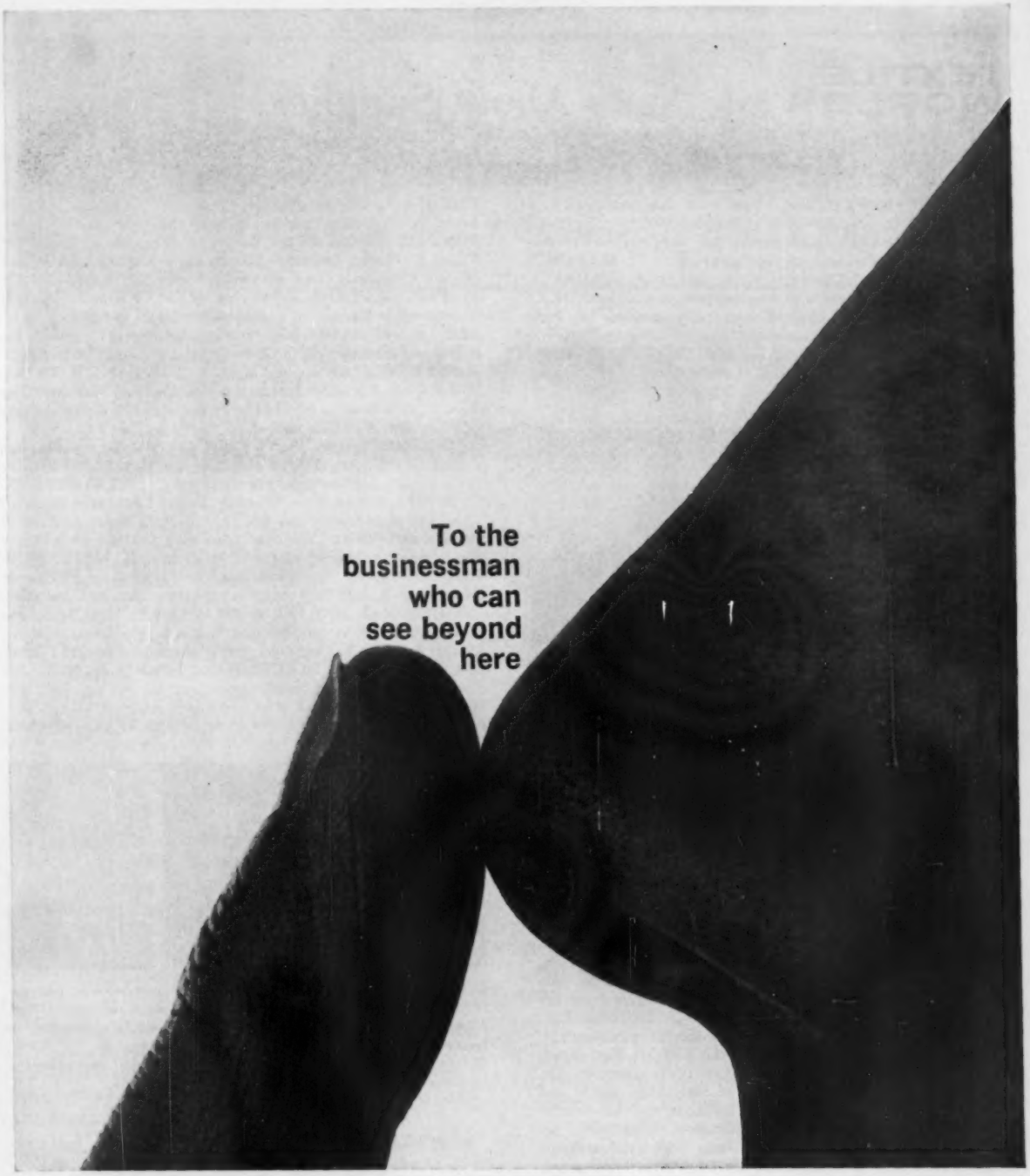
A-365—Pressure lubricated rings. Write for free literature. Whitinsville Spinning Ring Co.

A-366—Testers. For complete story on testers write for Bulletin CRE. Scott Testers, Inc.

A-367—Roving builder. Bulletin 320 is yours on request. Perfecting Service Co.

A-368—Slashers. For information send for new illustrated catalog. Cocker Machine & Foundry Co.

A-369—Cars and trucks. Illustrated catalog on request. National Vulcanized Fibre Co., Dept. BB-11.



Our population is growing, moving, shifting. And more people than ever need more goods—opening new areas in which to build your business, to provide more jobs in America's growing economy.

But how? And where? These key questions are answered best by marketing research, often costly and time-consuming. But it doesn't have to be. And it isn't—if you consult your U.S. Department of Commerce. On file, it has a 135-million-dollar fund of marketing data—vital and valuable up-to-date facts. Yours for the asking.

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Take advantage of the many ways in which your business can grow. In new U.S. markets. In foreign markets. In developing new products and services. In attracting new industry to your community. Just write or phone the U.S. Department of Commerce Office of Field Services in your city, or Washington 25, D.C. Your U.S. Department of Commerce is always ready to help you grow with America!

NOW'S THE TIME TO GET GROWING IN A GROWING AMERICA!

TEXTILE WORLD . . . News About Suppliers

AIR REDUCTION CO., INC., New York, has appointed J. J. Rendos assistant manager of sales company's Cryogenic Engineering Dept. Wlodek L. Ginilewicz has been named a supervisor of its chemical and carbide company. . . . **ALLIANCE CHEMICAL CORP.,** Newark, N. J., has promoted John A. Harley to sales manager with headquarters in Charlotte, N. C. William Rose Jr. is technical sales representative for New England. Jack Roddy will represent the firm in South Carolina, Georgia, and Tennessee. . . . **ALLIED CHEMICAL CORP.,** New York, has named John T. Coleman manager of sales services for Fiber Marketing Dept., National Aniline Div.

THEODORE P. MALINOWSKI (left) will head the reorganized chemical sales division, A. E. Staley Mfg. Co., Decatur, Ill. CHARLES C. GATES JR. (center) has been elected president, Gates Rubber Co., Denver. WILLIAM M. LACY JR. (right) has been appointed sales manager, Special Instruments Laboratory, Inc., Knoxville.

AMERICAN AIR FILTER CO., INC., Louisville, Ky., has promoted Charles D. Wright to Southern regional manager for Air Filter Div. Robert F. Logsdon is manager of engineering for Reed Div. . . . **AMERICAN VISCOSE CORP.,** Philadelphia, has named Harry G. Alwine manager of the new Cincinnati district sales office. Howard Heilman, Harold Dunn, and William Howells will transfer to Cincinnati as sales representatives. The firm's new Avicel (food ingredient) plant in Newark, Delaware, will start operation in early 1962. . . . **AVISUN CORP.,** Philadelphia, plans to introduce a new biaxially oriented polypropylene film early in 1962. The firm also plans active participation in producing polypropylene fiber in Japan, cooperating with the firm's licensee, Shin Nippon Chisso Hiryo K.K. Joseph T. Hanlon has been named manager of advertising.

CELANESE CORPORATION OF AMERICA, New York, has made the following promotions in its fibers company. Dr. Reiner G. Stoll is assistant director of marketing, plans, and programs. Dr. Robert D. Williams succeeds him as director of Applications and Product Development Laboratories in Charlotte, N. C. Fred Fortess has been appointed assistant director of the laboratories. . . . **CHEMOL, INC.,** Greensboro, N. C., is the name of a new firm which will manufacture chemicals for the textile industry. . . . **CHEMSTRAND CORP.,** New York, has purchased an interest in Blume Knitwear, Inc., manufacturer of "Helen Harper" sweaters and coordinates. The firm also made the following appointments: Doyle C. Nicely, superintendent of textile development; W. A. Norman, associate director, Applications Research and Service; E. J. Guilliland, manager, Acrilan Technical Sales Service; John B. Cole, manager, Nylon Technical Sales Service; and William R. O'Shields, manager, Nylon Technical Sales Service. . . . **CONTINENTAL CAN CO.,** New York, has officially opened its Technical Center in Chicago and Plainfield, Illinois. The $20-million center covers research on almost every major type of package.

COURTAULDS NORTH AMERICA, INC., New York, has elected Fred C. Foy, chairman of the board of Koppers Co., Inc., to its board of directors. . . . **CURTIS & MARBLE MACHINE CO.,** Worcester, Mass., has named Carroll C. Parker to the newly created position of sales manager. . . . **E. I. DU PONT DE NEMOURS & CO.,** Wilmington, has appointed Dr. Victor R. Hurka, assistant plant manager of Chambers Works, Organic Chemicals Dept. Robert F. Stevens is director of Technical Laboratory, Dyes and Chemicals Div. J. Donald Martone is responsible for sale of industrial chemicals in addition to his duties as intermediate sales manager. Robert F. Farwell has retired as manager of the New England district sales office. Harold L. Sager will succeed him. . . . **W. F. FANCOURT CO.,** Philadelphia, has opened its new textile chemical manufacturing plant in Greensboro, N. C. The laboratory and manufacturing facilities should double output.

FIRESTONE TIRE & RUBBER CO., Pottstown, Pa., has named Dr. John G. Davoud executive vice president of its plastics company and synthetic fibers company. . . . **FLETCHER INDUSTRIES,** Philadelphia, has underwritten a course in Jacquard Label Loom Assembly and Weaving at Philadelphia College of Textiles and Science. The firm is offering a scholarship to any textile man who desires to attend the course. . . . **GATES RUBBER CO.,** Denver, has promoted Stan Johnson to director of advertising. Robert E. Holwell is managing dealer of tire sales. . . . **GENERAL ANILINE & FILM CORP.,** New York, has named E. S. Underwood product manager, surfactants. W. C. Calvert Jr. is product manager, heavy chemicals, Antara Chemicals. . . . **GENERAL ELECTRIC CO.,** Schenectady, N. Y., has elected Charles J. Ellis Southeastern regional vice president. He succeeds Carter L. Redd, who is retiring. Harry P. Gough succeeds Clarence C. Walker as Western regional vice president.

RAYMOND J. MITCHELL (left) has been promoted to sales manager for the New York district sales office, Sandoz, Inc., New York. RICHARD D. ABELSON (center) has been named vice president of Textile Machinery Div., Saco-Lowell Shops, Easley, S. C. R. W. OSTERMAYER JR. (right) has been elected executive vice president, Pennsylvania Industrial Chemical Corp., Clairton, Pa.

HERCULES POWDER CO., Wilmington, Del., has completed its multimillion pound polypropylene fiber plant in Covington, Virginia. A complete fiber research center has also been established in Covington. The firm's overseas affiliate has recently opened a new plant. N. V. Hercules Powder Co., has dedicated its chemicals plants at Zwijndrecht, Netherlands. . . . **HEYDEN NEWPORT CHEMICAL CORP.,** New York, has appointed Arthur Minich president of Heyden Chemical Div. Daniel W. Klohs has been named manager of vinyl additives, Nuodex Products Div. . . . **HOOKER CHEMICAL CORP.,** New York, has promoted William D. Morrison to general manager of the newly formed International Div. . . . **JAMES HUNTER MACHINE CO.,** North Adams, Mass., will manufacture Krofta Enginering Corp.'s water clarifiers. . . . **HYSTER CO.,** Portland, has elected Philip S. Hill president. Ernest G. Swigert becomes chairman of the board of directors and chief executive officer. Harvey N. Black is senior vice president in addition to his duties as secretary and treasurer.

. . . *Turn to page 188*

What you should know about STARCH*

YOU PROBABLY KNOW—BUT OTHERS MAY NOT

When should compounds and waxes be added to size mixes?

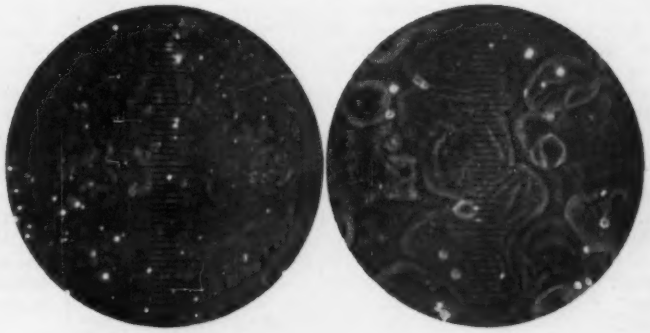

Figure 1 Figure 2

Photomicrographs taken at 382.5X magnification.

Compounds and waxes are important ingredients in size mixes. Their purpose and use are well defined. They make the starch film pliable and flexible and provide lubrication for the surface of the yarn. All of these factors aid in protecting the yarn from the slasher through the loom.

In many textile mills it is customary, in preparing a size mix, to add the starch to a predetermined amount of cold water, agitate the starch and water for about ten minutes, turn on the steam and immediately add the compounds and waxes. The procedure is good until the last step—adding the compounds and waxes to a cold slurry. This is wrong.

The fats, oils and waxes in the compounds added to uncooked starch retard or prevent complete gelatinization of the starch granules. In other words, the starch is inhibited. The results can be a partially cooked size which causes excessive shedding and yarn breakage.

To demonstrate the above action, The Hubinger Company's laboratory made photomicrographs of cooked starch. In Fig. 1, compounds were added after the starch slurry had been heated to 200° F. In Fig. 2, compounds were added before starch was heated and then cooked the same as starch in Fig. 1. Note the large number of unopened starch granules in Fig. 2 compared with Fig. 1, which is a well-cooked and homogeneous size mix.

Therefore, to prepare a well-cooked, uniform size that will provide results desired, it is strongly recommended that compounds and waxes be added after the starch is completely gelatinized. They should be added ten to fifteen minutes before the end of the cooking cycle to allow for melting and complete dispersion. When charging a cooking kettle with starch slurry, the level should be adjusted so that 15 to 20 inches outage remains between the cooked size level and the top of the kettle. This outage is important to prevent hot size from splashing on the size maker when adding the compounds.

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* *One of a series of articles. Write for the complete set and for our continuing technical data service, without obligation, to:*

OK BRAND

TEXTILE DIVISION

THE HUBINGER COMPANY

KEOKUK, IOWA

FOR MORE DATA REFER TO READER SERVICE CARD—ADV. NO. 187

News About Suppliers . . . *Begins on page 186*

DANIEL LUCAS (left) is Eastern regional sales service manager for Industrial Div., Corn Products Sales Co., New York. HOWARD M. BRITTAIN (center) has been assigned to the Atlanta regional office as a technical service representative, Pennsalt Chemicals Corp., Philadelphia. B. NEVLING CLUNE (right) has been appointed vice president and general manager of Scale Div., Fairbanks, Morse & Co., Yonkers, N. Y.

LUNKENHEIMER CO., Cincinnati, has named John L. Rice sales representative. He will cover West Texas and New Mexico. . . . **MAREMONT CORP.,** Chicago, has appointed J. Theodore Wolfson to the newly created post of assistant to the chairman. . . . **MIDWEST FOAM PRODUCTS CO.,** Evanston, Ill., has made the following appointments: Win L. Pettingell, sales manager; William E. Cunningham, controller; and A. L. Rhoton, director of research. . . . **MINNEAPOLIS-HONEYWELL REGULATOR CO.,** Minneapolis, has named Jack E. Dalton textiles representative, Electronic Data Processing Div. The division has also started production of the Honeywell 400 medium-scale computer and is expanding output of its 290 industrial process control system.

PENN-OLIN CHEMICAL CO., Calvert City, Ky., has completed its new sodium-chlorate plant at Calvert City. . . . **PENNSALT CHEMICALS CORP.,** Philadelphia, has named Carl A. Hiester assistant advertising manager. . . . **PENNSYLVANIA INDUSTRIAL CHEMICAL CORP.,** Clairton, Pa., has appointed Ronald Neubert general production manager over plants in Clairton, West Elizabeth, and Chester, Pa. Albert M. Berseth is now head of process, development, and maintenance. . . . **PITTSBURGH PLATE GLASS CO.,** Pittsburgh, has named O. W. Andrews to the newly created position of director, marketing services for the chemical division. . . . **ROBERTS CO.,** Sanford, N. C., has purchased Southeastern Loom & Machine Works and renamed it the Greenwood Div. The firm has appointed D. M. Pitts works manager and Thomas Lee foundry manager at the Greenwood Div. . . . **RYCO INC.,** Conshohocken, Pa., has announced that Bayard S. Johnson has joined the firm as manager of chemical sales.

SACO-LOWELL SHOPS, Greenville, S. C., is producing its new high-speed Roving Frame at the Easley (S. C.) plant. A. L. Park has retired from the sales department after 25 years of service. . . . **SINGER MFG. CO.,** New York, is purchasing Supreme Knitting Machine Co., Inc., Ozone Park, N. Y. . . . **STANLEY WORKS,** New Britain, Conn., has elected Donald W. Davis vice president. . . . **TEXIZE CHEMICALS, INC.,** Greenville, S. C., has appointed Ralph L. Parker manager of the North Carolina and Virginia area for Textile Div. . . . **TEXTILE MACHINE WORKS,** Reading, Pa., has bought Schooler Mfg. Co., Inc., of Pacoima, Los Angeles. . . . **TOW-MOTOR CORP.,** Cleveland, has elected Galen Miller president.

UNITED STATES TESTING CO., INC., Hoboken, N. J., has opened its new Chicago branch laboratory. . . . **VEEDER-ROOT INC.,** Hartford, Conn., has named Carl D. Whitmer Jr. manager of the sales and service center in Greenville, S. C. . . . **WHITIN MACHINE WORKS,** Whitinsville, Mass., has appointed Rudolph Lux product manager of cotton machinery. Jesse J. Loredo has been promoted to manager, mill surveys. Stephen W. Gifford Jr. has recently joined the Wool and Worsted Machinery Sales Dept. . . . **WHITINSVILLE SPINNING RING CO.,** Whitinsville, Mass., has named C. E. Davis representative in Georgia, Alabama, Tennessee, and part of South Carolina.

Mauser Spezial

Overlock sewing machines
Single chainstitch sewing machines
Double chainstitch sewing machines
Machines for inserting elastic
Machines for attaching pre-cut borders and continuous bands
Cylinder sewing machines
Feed off the arm seam felling machines
Flat seam machines
Bag sewing machines
Strip cutting machines

INDUSTRIE-WERKE KARLSRUHE Aktiengesellschaft · KARLSRUHE

TEXTILE WORLD . . .

News About Men

BURKE M. McCONNELL is vice president, man-made fibers purchasing. Burlington Industries Inc. (New York).

JAMES M. RENNIE has recently been appointed vice president, Artistic Weaving Co. (Pompton Lakes, N. J.)

C. Allen Gove has been named controller of The Kendall Co. (Boston).

T. C. Smotherman has resigned as vice president and director of American & Efird Mills, Inc. (Mount Holly, N. C.). He is joining Kimberly Yarn Mills, Inc. (Mount Holly) as vice president and director.

George Kirkpatrick is managing the yarn spinning operation for Kingston Mills, Inc. (Cartersville, Ga.).

Charles Deerson and **Mitchell Aronstein** have been named assistant vice presidents, M. Lowenstein & Sons, Inc. (New York).

The following have been appointed sales representatives for Magnet Mills, Inc. (Clinton, Tenn.): **John C. Mansell, Thomas O. O'Keefe Jr.,** and **John G. Lester.**

Jacob L. Mosser Jr. is sales representative for Massachusetts Mohair Plush Co., Inc. (Kings Mountain, N. C.).

John Thomas has been named superintendent of Manantico Bleachery (Millville, N. J.), operated by Millville Mfg. Co. He succeeds **Arthur L. Flinner,** who resigned.

Reeves Brothers, Inc. (New York) has appointed **Donald A. Walen** manager, Special Products Dept. **Abe Mandell** will handle sales of irregular fabrics for the finished goods sales department.

Peerless Hosiery Co. (North Wilkesboro, N. C.), division of United Hosiery Mills Corp., has a new president and director. He's **Robert H. Meador.**

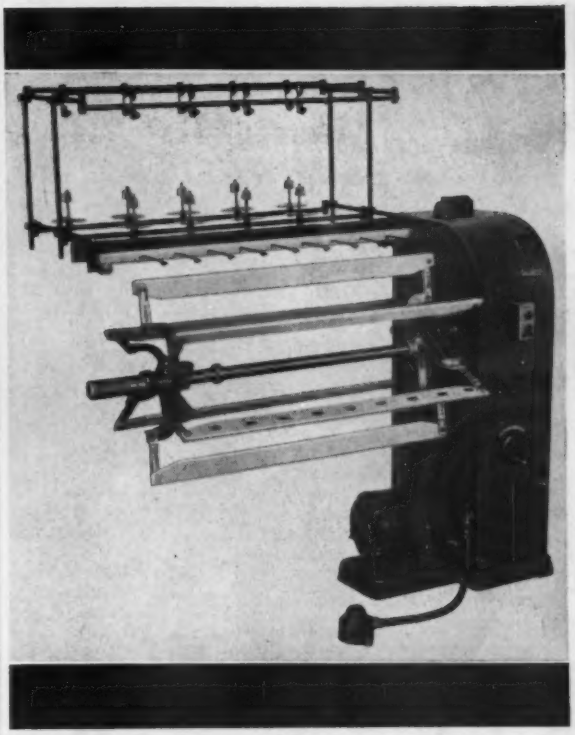
William H. McCauley has been promoted to senior industrial engineer at Ware Shoals (S. C.) plant, Riegel Textile Corp.

Thomas J. Creswell has been named superintendent of Kezar Falls Div. of Robinson Mfg. Co. (Oxford, Me.).

Two new regional sales managers have been appointed by Healthknit Div. of Standard Knitting Mills, Inc. (Knoxville, Tenn.). **C. Lee Carl** will manage Midwest sales accounts and **James R. Dance** the South-West Div.

Textile Research Institute (Princeton, N. J.) has named **Dr. Ralph H. Beaumont** to its Research Advisory Committee. He is director of chemical research, Huyck Felt Co.

John T. Wigington and **M. Earl Heard** have been appointed advisors on cotton utilization research at Southern Utilization Research and Development Div. (New Orleans). United States Department of Agriculture. Mr. Wigington is director of Technical Service



increase Production and Profit with the FIDELITY SKEIN REELER

Installed on production lines, and in laboratories throughout the U. S.—and in more than 25 countries abroad—because they are more efficient, more profitable, than any comparable machine. The Fidelity Skein Reeler features:

Automatic skein-weight control	Brakemotor, for quick stopping
Predetermining counter	Electric stop motions
Collapsible reels, adjustable to size	Safe, compact, enclosed drive
Variable speed control	Adjustable yarn traverse
Adjustable yarn creels	Free end reels for quick doffing

The Fidelity Skein Reeler is job-proven in mills throughout the world. Small, compact reels permit operator to attend two or more machines. While operator is removing finished skeins and starting new ends on first machine, second machine is winding. There is no lost time—no waste motion. Reelers can be furnished with various types of supply stands.

For more information, write for brochure describing different laboratory and production models.

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A Subsidiary of The Singer Manufacturing Co.
3908 Frankford Ave., Philadelphia 24, Pa., U.S.A.
EXPORT AGENT: 11 Broadway, New York 4, N.Y. • Cable Address: FIMACO
In Canada: W. J. Westaway Co., Ltd., Toronto and Montreal, Canada

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Yes, guaranteed elimination of static problems that slow-up production and eat up profits, that's what our CURASTAT and OXY COLD BAR represent.

Get rid of static-caused headache forever. Send us specifications of your equipment. We'll provide expert recommendations without obligation. DON'T DELAY!

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SPECIALIZING IN TEXTILES SINCE 1914

Ralph E. Loper Co.

ADV. NO. 264

READERS . . .

Do you need more information on a product or service advertised?

USE READER-SERVICE CARD FOR PROMPT REPLY.

News About Men

. . . *Begins on page* 189

EMIL PIEPER has recently been promoted to quality manager of Schlegel Mfg. Co. (Rochester, N. Y.)

JULES LAVNER has joined the fabric development department, Waumbec Mills, Inc. (Manchester, N. H.).

Div., American Cotton Manufacturers Institute, Inc. Mr. Heard is vice president of research, West Point Mfg. Co. **Edward W. S. Calkins** has been named cotton marketing specialist, Department of Agriculture, Clemson, S. C.

Edward E. Foster has been elected a director and **Katherine E. Wardwell,** corporate secretary, W. E. Wright & Sons Co. (West Warren, Mass.).

R. W. Hasselle is now executive assistant (Southern division) to the senior vice president, Aberfoyle Mfg. Co. (New York).

Airedale Worsted Mills, Inc. (Stony Point, N. C.) has appointed **Travis Laney** to be its resident manager.

Douglas S. Gardner is credit manager, American Felt Co. (Glenville, Conn.). He succeeds Harold F. Roche, who is retiring after 28 years with the firm.

Two additions to the recently expanded technical staff at American Finishing Co. (Memphis) have been announced. **Leon Tigler** is assistant director of research and development. **Harold Keels** is superintendent of the dyeing department.

Reuben Cohen will cover Louisiana, Mississippi, and Mobile, Alabama territories as sales representative for Artistic Weaving Co. (Pompton Lakes, N. J.).

As a result of changes in stock ownership, the following are the newly elected officers of Baltic Mills Co. (Baltic, Conn.): **Robert W. Sayles Jr.,** president; **Howard P. Derrickson,** executive vice president; **William G. Marsden,** treasurer, **Earl A. Philipp,** assistant treasurer; and **Hayward T. Parsons,** secretary.

Director of sales and marketing is **Robert C. Allen's** new title at Bear Brand Hosiery Co. (Chicago).

After 32½ years of service, **H. B. Summerell Sr.** has retired as Greensboro district sales manager of Fibers Div., Beaunit Mills, Inc. (New York). **J. D. Cummings** succeeds him.

John E. Hartley has been elected a vice president of Berkshire Hathaway, Inc. (New Bedford, Mass.). **James A. Olsen** has been appointed merchandise manager of colored yarn fabrics.

Thomas F. Cahill has joined Bibb Mfg. Co. (Macon, Ga.) as assistant director of the research and development department.

Alvin S. Kieft has joined Reeves Brothers, Inc. as technical production superintendent of the Rutherfordton (N. C.) plant.

Chicopee Mfg. Co. has recently filled two posts at its Manchester (N. H.) plant. **C. Richard Whitehead** is plant manager and **Benjamin Leaver** plant superintendent.

Robert J. Ellis has been named sales promotion manager, rug and carpet depart-

ment, Cavel Div., Collins & Aikman Corp. (New York).

T. Clayton Pegram has retired as superintendent of the No. 1 Mill of Erwin Mills, Inc. (Durham, N. C.) after 32 years of service. **John T. Threatt** succeeds him. **Gilbert C. Mays** is the new assistant superintendent. **John R. Fulp Jr.,** vice president and secretary of Abney Mills, has been elected a member of the board.

Fruit of the Loom, Inc. (Pontiac, R. I.) has appointed **Theodore M. Kaufman** vice president for its marketing services.

Two promotions have been announced by Gayley Mill Corp. (Marietta, S. C.), a division of Deering, Milliken & Co., Inc. **James H. Sawyer** is technical superintendent and **Harrison P. Clamp** is the new plant engineer.

Herman R. Wittrock is technical sales advisor of Herculite Protective Fabrics (Newark).

Johnstown Knitting Mill Co., Inc. (Johnstown, N. Y.) has elected **Clark Easterly** as its president and general manager.

American Cotton Manufacturers Institute, Inc. (Charlotte, N. C.) has recently elected new officers. **Albert G. Myers Jr.,** president of Textiles-Inc., is president. **J. J. Hinds,** Botany Cottons, Inc., is first vice president. **J. H. Martin Jr.,** Piedmont Processing Co., is second vice president. **M. T. Cameron,** A. M. Smyre Mfg. Co., is treasurer.

Combed Yarn Spinners Association, Inc. (Gastonia, N. C.) has elected **James H. Campbell** president.

North Carolina Textile Manufacturers Association (Charlotte, N. C.) has elected the following: **D. R. LaFar Jr.,** LaFar Mills, president; **Hal W. Little,** Little Cotton Mfg. Co., first vice president; **Marshall Y. Cooper,** Harriet & Henderson Cotton Mills, second vice president; and **Thomas N. Ingram** of Charlotte, executive vice president, secretary, and treasurer.

Carded Yarn Association, Inc. (Charlotte, N. C.) has elected the following: **W. R. Austin,** vice president of Avondale Mills, president; **B. D. Banks,** vice president of Habersham Mills, first vice president; **J. M. Ledbetter Jr.,** president and treasurer of Ledbetter Mfg. Co., second vice president; and **E. O. Fitzsimons,** executive vice president.

OBITUARIES

Max Auerbach, 61, vice president, Luxite Silk Co., Hazleton, Pa.

Luke J. Castile, 69, retired sales representative, Keever Starch Co., Greenville, S. C.

John L. Crist, 71, retired president, former Southern Dyestuff Co., Charlotte, N. C.

Charles A. Horton, 87, retired president, Hope Webbing Co., Pawtucket, R. I.

Alexander Lamport, 74, senior partner and founder, A. Lamport & Bro., New York.

Thomas A. Marlowe, 65, president, Marlowe-Van Loan Corp., High Point, N. C.

John T. McAlister, 84, retired supervisor of the spinning room, Woodside Mills, Greenville, S. C.

William E. McDaniels, 60, director, vice president, and production manager, Wm. Carter Co., Needham Heights, Mass.

James R. Platt, 32, chief felt engineer, Huyck Felt Co., a division of Huyck Corp., Rensselaer, N. Y.

Edward Ramsey, 55, controller, Acclaim Hosiery Mills, Inc., High Point, N. C.

Thomas P. Townsend, 54, assistant secretary of J. P. Stevens & Co., Inc. and manager of its Watts Plant, Laurens, S. C.

James V. Young, 69, president of Cosmos Imperial Mills, Ltd., Yarmouth, Nova Scotia, and vice president of Hamilton Cotton Co., Ltd., Hamilton, Ontario.

TEXTILE *testing ovens*

- **Separate Rack Doors In Full-Opening Door**
- **Electric Heat, 6KW max.**
- **450° F. Automatic Control**
- **Only $820**

This Despatch textile-testing oven has been enthusiastically accepted by manufacturers across the nation.

Typical uses include testing resin and ink drying on cloth samples stretched over pin frame racks.

Heated evenly with electricity, it is provided with an indicating automatic temperature controller and individual rack doors to minimize heat loss. Rack doors are part of the single, full-opening door.

The four rack model is standard, but Despatch will provide larger units upon special order. Models with six to ten racks have been in service for many years.

For complete information, send today for free bulletin 203-7GR

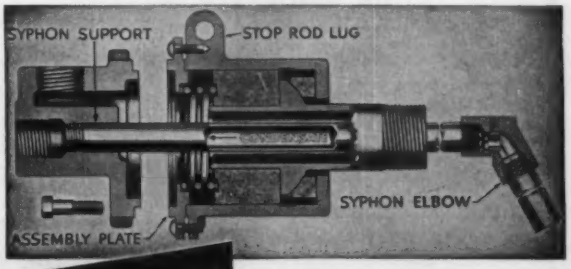
DESPATCH OVEN CO.

DESPATCH OVEN CO. 619 S.E. 8th St., Minneapolis 14, Minn.

ADV. NO. 265

TRY THIS on your Dry Cans and 30" Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



Johnson ROTARY PRESSURE Joints

First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

THE JOHNSON CORPORATION

814 Wood St., Three Rivers, Mich.

ADV. NO. 266

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

DISPLAYED RATE

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

EMPLOYMENT OPPORTUNITIES — $33.80 per inch subject to agency commission.

INFORMATION

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

An ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

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(Not available for Equipment Advertising) $1.50 a line. Minimum 3 lines. To figure advance payment count 5 average words as a line. (See ¶ on Box Numbers.)

POSITION WANTED undisplayed rate is one half of above rate, payable in advance.

BOX NUMBERS count one additional line.

Send New ADS or Inquiries to Class. Adv. of Textile World, P. O. Box 12, New York 36, N. Y., For December Issue Closing November 15th

TEXTILE TECHNICAL DEVELOPMENT AND LIAISON OFFICER

FOR JAPAN

The International Wool Secretariat invites applications for the post of Technical Officer in its Japanese Branch, Tokyo.

The International Wool Secretariat is an organization established by the statutory Wool Boards of Australia, New Zealand and South Africa for carrying out their global policy of increasing the consumption of wool by means of promotion, market research, scientific research, technical development and liaison with all segments of the wool consuming and distributing industries.

Applicants should have a degree in chemistry, physics, chemical or mechanical engineering or the equivalent as well as several years experience in either research, development or production in the textile industry. Such experience in the various branches of the wool textile industry would be an advantage.

Fluency in speaking Japanese and reading Japanese professional publications is essential. The duties of the Technical Officer will include organizing a technical information and service group to introduce into the Japanese wool textile industry new techniques (chemical and physical) for producing new and improved wool products and for increasing the efficiency of wool manufacturing. The Technical Officer will be required to maintain close contact in English with similar I.W.S. operating groups throughout the world.

Remuneration will compare favorably with similar appointments in Japan.

Applicants should apply in writing giving full details of their qualifications and personal background to:

Director of Science and Technology
The Wool Bureau, Inc.
360 Lexington Avenue, New York 17, N. Y.

TEXTILE MEN*

with practical management experience and thorough technical knowledge of cotton, synthetic or woolen and worsted

SPINNING & WEAVING
OR
DYEING AND FINISHING

for *permanent* overseas positions with leading U.S. consulting firm. Work requires youthful energy, drive, analytical ability, and forcefulness in solving mill problems of quality, labor and production costs.

Job security, top salary, overseas travel, unlimited growth opportunity for thoroughly experienced engineers.

WRITE in confidence giving personal, educational and business history to

P-7474, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

* Staff openings also for industrial engineers with similar production experience.

MECHANICAL ENGINEER

Experienced in design and development of textile finishing and auxiliary machinery to form nucleus of new development section. Prominent East Coast manufacturer. Salary open.

Write: P-7629 Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

ADDRESS BOX NO. REPLIES TO: Box No.
Classified Adv. Div. of this publication.
Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 645 N. Michigan Ave.
SAN FRANCISCO 11: 255 California St.

POSITIONS VACANT

Worsted Spinning Foreman. Must also know roving. Specialty work. Apply: Worsted, Box 90, York, South Carolina.

Plant Manager—immediate opening . . . Thorough varied experience in textile printing and finishing mills . . . Southern location . . . Excellent opportunity . . . Please state full details, background, salary, etc. P-7637, Textile World.

Large Long Established Package Dyehouse in New York Metropolitan area has opening for experienced Boss Winder capable to take full charge & must have experience in preparing both wool & synthetic yarns for package dyeing—salary commensurate with ability. Only people who are able to run a mill efficiently from a view of production and economy and had similar positions need apply. P-7748, Textile World.

POSITIONS WANTED

Textile Superintendent—Thoroughly experienced in preparatory and weaving all fabrics, natural and man made fibers. Know all types C&K and Draper looms. Available for domestic or overseas position. PW-7280, Textile World.

Available: Highly qualified Textile Mechanic —knowledge of all phases of Raschel Knitting. Experienced in managing plant. Location no problem. Write PW-7617, Textile World.

Textile Engineer offers broad experience in manufacturing and consulting engineering. Desires more challenging association with mill group or with established A/E firm of medium or small size. PW-7390, Textile World.

Textile Eng.—Extensive experience in the knitting field, desires position, Research and Development, in methods & end products. Resume & references on request. PW-7699, Textile World.

Tricot/Raschel, Technician. Specialist design & development novelty fabrics. Seeks promotion new ideas for U.S. market. Competent, production background. British origin. Consider any assignment. References. PW-7741, Textile World.

COMPLETE BOBBIN SERVICE

We modify and refinish customers' bobbins.
We buy and sell used bobbins, cones, spools, etc.
We sell reconditioned bobbins of all types.
We furnish new bobbins by leading mfgrs.
We mfg. all types of specialty wood items.

SOUTHERN BOBBIN WORKS, INC.
200 McKoy St., Greenville, S. C.
P. O. Box 3514 Telephone CEdar 3-2737

ADV. NO. 400

"Put Yourself in the Other Fellow's Place"

TO EMPLOYERS
TO EMPLOYEES

Letters written offering Employment or applying for same are written with the hope of satisfying a current need. An answer, regardless of whether it is favorable or not, is usually expected.
MR. EMPLOYER, won't you remove the mystery about the status of an employee's application by acknowledging all applicants and not just the promising candidates.
MR. EMPLOYEE you, too, can help by acknowledging applications and job offers. This would encourage more companies to answer position wanted ads in this section. We make this suggestion in a spirit of helpful cooperation between employers and employees.
This section will be the more useful to all as a result of this consideration.

Classified Advertising Division
McGRAW-HILL PUBLISHING CO., INC.
330 West 42nd St., New York 36, N. Y.

Auction Advertising—page 198

LIQUIDATING

Former Cliffside Dyeing Corporation, 99 Cliff Street, Paterson, New Jersey

All Machinery and Equipment and 130,000 Sq. Ft. Mill Building

Partial Listing

1—James Hunter "Jet" Finishing Range consisting of: 1—72" Padder, 1—50' 70" Enclosed Tenter with Overfeed Arrangement, 8—70" face Stainless Steel 50 lb. Dry Cans, 2—Pre-Drying Units, 5—70" 50 lb. Stainless Steel Cans, 1—Gas Fired Roller Curer, 1—Steam Heated Chamber, M. G. Set, etc.
1—Enclosed Palmer Tenter Unit consisting of: 70" Pad, 50' 66" Tenter, Gas Fired Housing, 70" Low Type Palmer.
2—Hunter Roller Dryers, 70" rolls, 23' long, 1 steam heated, 1 gas heated.
1—66" Double Hinnekens Boil-off Machine.
1—50" Hinnekens Boil-off Machine.
15—Stainless Steel Lined Dye Becks, with stainless steel enclosures, 3' to 14' widths.
8—Mezzaro Stainless Steel Enclosed Dye Jigs, 66" wide, tensionless and automatic.
1—Morrison 70" 2 Roll Micro-set Pad, 15 ton pressure.
1—66" 2 Roll Pad, 7½ ton lever pressure.
3—2 to 4 Burner Singers, 64" to 70" wide.
3—Scutchers, 72" to 78" wide.
1—Set of 17—70" x 23" Stainless Steel Ball Bearing Dry Cans.
1—70" 3 Roll Verduin Hydraulic Calender, 40 ton pressure.
3—55" to 64" Progressive Examining Machines.
3—64' High Speed Tubers.
1—Gessner 80" 24 Roll Napper, late model.
5—Semi Decators, 50" to 60" widths.
1—Gessner 72" Cloth Press.
1—P & W 3 Blade 68" Shear, with Gap Rest.
1—Kettling & Braun 72" Shear, late model.
1—Modern and Complete Laboratory consisting of many fine items. Complete Office Furniture and Machines.

Also: Trucks, Shells, Pails, Lifts, Hoists, Water Coolers, Sewing Machines, etc.

130,000 sq. ft. fully sprinklered mill. Can be used as dye house or warehouse or etc.

For full details contact

Cliffside Liquidators

99 Cliff Street **Paterson, New Jersey**

Telephone: SHerwood 2-2070

ADV. NO. 401

Liquidating

The Modern Dyeing and Printing Machinery of the Former Eureka Print Works, Clifton, N. J.

BLEACHING

1 Rodney Hunt Stainless Continuous Bleach Range, DuPont type
2 "J" boxes 25' high, 4000 lb. cap.
4 Tensitrol Rope Washers
2 Saturators, Age 1949
3 Rodney Hunt Stainless Steel Tensitrol Rope Washers
1 Weisner-Rapp S.S. Continuous Rope Bleaching Unit consisting of
1 Weisner-Rapp J Box, 20' high
1 Aluminum Peroxide Tank, 5000 gals.
24 Allen Kiers

FINISHING

1 Butterworth 56" Rubber Belt Compressive Shrinking Range—1956
1 Proctor & Schwartz Roller Cure Dryer 24'
34 S.S. Dry Cans 90 x 30" dia.
1 Textile 70' Enclosed High Speed Tenter Frame and housing
1 McKiernan-Terry Combination Schreiner, Friction and Rolling Calendar, 50 ton, 50"—1956
1 Perkins 3 roll 100 ton Hydraulic Calendar
2 Perkins 5 roll 50 ton Calendars—1948
61 S.S. Dry Cans 47", 30 lbs. pressure
44 S.S. Dry Cans 142 x 23" dia.
8 Morrison S.S. Dry Cans, 60" wide, 50 lbs. pressure
1 Cocker Indigo Dye Range, 1948

WASHING AND DYEING

1 3 roll General Machine 3 roll Pneumatic Padder 50"
1 S.S. 4 compartment Open Width Washer
1 Burlington S.S. Beam Dyeing Unit
8 Textile & Werner S.S. Dye Jiggs 50" to 70"
2 Blickman Dye Boxes (Stainless steel)

PRINTING AND AGEING

1 Proctor & Schwartz High Speed Loop Ager, age 1954, 2 strand, 390 yds. per strand, 16' high x 42' long x 11' wide, electrically heated top, 2 Reeves motor units, automatic control

1 Rice, Barton & Fales 50" 10 color Print Machine
1 Rice, Barton & Fales 8 color Super Precision Print Machine 50"
1 Textile 8 color Print Machine 54"
2 Vat Agers, brass rolls
1 Votator, Stainless Steel, Age 1954
3000 Engraved Copper Rollers
3 Hayssen Cello Wrapping Machines Age 1953
3 Progressive Heavy Duty Inspecting Machines—1958

OTHER MODERN TEXTILE MACHINERY

37 Draper XD Looms, 54" reed, Diehl and Motor, 1951
56 Universal #10 Uptwisters, 184 spdls., 2 lb. headless package, 1950
100 Whitin Model F. Spinning Frames 3" ga.

Republic
TEXTILE EQUIPMENT COMPANY

APPRAISALS
•
PURCHASE AND SALE TEXTILE MACHINERY
•
LIQUIDATION OF MILL PROPERTIES

40 Worth Street, New York 13, N.Y. • COrtlandt 7-1590

ADV. NO. 402

LIQUIDATING

PRICES SLASHED

Modern Dyeing & Finishing Machinery of Ming Toy Dyeing Co., Paterson, New Jersey

MUST VACATE BUILDING

1—64" x 70' gas fired Enclosed Tenter Range, 60' Housing, Pneumatic Padder, Pre-Heater, Heat Setting Roller Curer, Hydraulic Batcher, Auto. Cut-Off.

2—Werner & Verduin 60" Pneumatic Padders, 12½ tons each, rubber rolls—$3200 each.

1—Werner 50" Pneumatic Padder. 12½ tons, rubber rolls—$2000.00.

1—Tenter 50" x 50', S.S. Clips—$1000.00.

1—50" V.V. 3-roll Calender.

1—52" Hinnekens Boil-Off, S.S. Chain.

1—Open Width Washer 65", 3 compart., 3 sets of rubber squeeze rolls—$1000.00.

1—62" Textile Singer, Reversible—$750.00.

1—V.V. 73" Decatur—$2200.00.
4' to 12' S.S. Lined Dye Becks.

3—51" to 62" Beamers—$200 each.

6—10' and 12' S.S. Oval Reels.

1—V.V. Button Breaker 50".

2—Merrows 60 D3B with tables & motors and 2-Merrows 60 D3B on tracks, portable.

1—60" and 1—54" V.V. Tubers—$450 each.

3—Werner 70" S.S. Jiggs.

2—60" Hinnekens Inspection Machines with reverse.

1—Tenter 60" x 50' S.S. Clips.

1—Maxon Heater.

3—Water Softeners, fully automatic, 10' x 10', 8' x 10', $1500 each.

1—750 HP Boiler, Steam Generator, Water Walls, 80,000 lbs. Steam per Hr.

3—Filter Tanks.

Machine & Carpenter Shop Equipment.

Building for sale or rent, 85,000 sq. ft. Sprinklered, free water.

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.

SHerwood 2-1367-8

ADV. NO. 403

PRECISION PIN PLATES

New and Repinning
for all makes tenters
domestic and foreign
K-monel and steel pins
special finish for carbonizing
Send sample plates for quotation.

SOUTHERN TEXTILE WORKS

P. O. Box 404 202 South Towery St
Anderson, South Carolina

ADV. NO. 404

UNEXCELLED QUALITY IN REBUILT AND USED TEXTILE EQUIPMENT

We have excellent reconditioned, rebuilt and used winding and textile equipment at considerable saving to you.

Check with us on your requirements

SMS Standard Mill Supply Co.

31 Esten Ave., Pawtucket, R.I.
Phone PA 3-1534

ADV. NO. 405

BOBBINS—BOBBINS—BOBBINS

Our specialty is good used automatic loom bobbins. We also deal in twister and roving bobbins. Send us samples of what you need or what surplus bobbins you have.

CHARLES G. STOVER COMPANY
West Point, Georgia

ADV. NO. 406

Quality NARROW FABRIC MACHINERY!!
. all types . . .
FOR THE ENTIRE TRADE —*at prices you can afford*

10—1950—54 FLETCHER—13 FT. TAPE LOOMS.
2—FLETCHER 24 SP. SEAT BELT LOOMS.
1—13 CAN 52" FINISHING MACHINE.
1—8 CAN 18" FINISHING MACH. CALENDAR.
1—5 CAN 18" FINISHING MACH. CALENDAR.
1—3 CAN 18" FINISHING MACH. CALENDAR.
1—16 CAN 52" FINISH. MACH. S.S. QUETSCH.
10—RUF BLOCKING & SPOOLING MACHINES.

HUSSONG DYE MACHINES
2—500 LB. S.S. RAW STOCK
2—50 LB. S.S. SKEIN
2—75 LB. S.S. SKEIN
1—100 LB. WOOD S.S. LINED SKEIN
1—1955 100 LB. PEG S.S. MACHINE
2—200 LB. SMITH DRUM ROTARIES—MONEL

20 DYE BECKS
Stainless Steel — Open & Closed from 2 Ft. to 16 Ft. Wide, From 32 to 60" Deep.

3 FIDELITY—2 ARM REELING MACHINES
— HI-SPEED —

4 WHITIN MODEL L-1947 NOVELTY TWISTERS . . .
5½ GAUGE • 9" TRAVERSE • 4½" RINGS • 200 spindles each—knee brakes, separators, all have pin creels —motorized, 15 HP, 550 volt—60 cycles. Machines in like new condition. Bobbins available with machines.

SMITH DRUM SKEIN MACHINES
CASCADE TYPE — 1951 MODEL
2-3 Arm Machines—2-5 Arm Machines—1-7 Arm

COCKER—80" DOUBLE SIZE BOX
60 Gal. Cap. Pneumatic—Stainless & Rubber Rolls

19-W3AC LOOMS 84"-1953 MODEL
2 x 1 BOX, 8 HARNESS CAP.—MOTORIZED
3 HP/440 VOLT/60 CYCLE MOTORS

5—REINER RT4 TRICOT MACHINES
2—Bar—168"-28" gauge — accommodate 21x21 Bobbins—Positive take up & let off. (Graham trans.) Magnetic clutch, watts scanner—new sinkers & needles overhauled in 1960.

3—REINER TRICOT WARPERS & CREELS
WARPERS—SW 24 Model Complete with Reliance Drive, Let Back, scanners.
CREELS—600 Ends Magazine Type All Alsomeg For Nylon Work.

7 U. S. REDRAWS
52 SP. EACH—HI SPEED—SPINDLELESS
Hen. Tensions—1 lb. Cap.

4-H&B SPINNERS
200 Sp. Ea—4½"—Gauge—3¼ Ring, 9¼ Trav. Pneumatic

2—ATWOOD 10-B's 2-LB. DOUBLERS
100 Spindles per machine, 7" Ga.—8" Traverse Tapered Wind.

CALENDERS— 1—V. V. 7½ TON 1—V. V. 20 TON

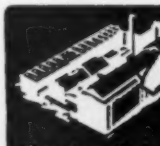
V. V. 1951—70" PALMER

5. STEEL PADDLE DYE MACHINES
4—250 LB.—INSTRUMENTS
1—150 LB.—INSTRUMENTS
1—100 LB.—INSTRUMENTS
1—10 LB.—INSTRUMENTS
1—200 LB. TOTALLY ENCL. S.D.—INSTRUMENTS
1—500 LB. TOTALLY ENCL. INSTRUMENTS
1—400 LB. TOTALLY ENCL. INSTRUMENTS

2—SIPP-EASTWOOD 101" MAG. DY—GOOD COND. WARPERS

7 FLUFLON MACHINES
204 SPINDLES EA.—1955
CREELS & ALL ELECTRICAL EQUIPMENT
550 V 3 PH. 60 CYCLES

100 LB.—SMITH DRUM PACKAGE DYE MACHINE
80 PKG.—3½ TUBE—COMPLETE WITH CARRIERS AND BROWN INSTRUMENTS



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TEXTILE MACHINERY, BOBBINS & SUPPLIES
Gordon & Jordan Streets • HEmlock 4-9525 • Allentown, Pa. • Cable: RAB

ONLY PARTIAL LISTING . . . SUBJECT PRIOR SALES . . . SELECTED STOCK OFFERINGS

ADV. NO. 407

FOR SALE!

1—W & J Swing Tenter, 90' long, 50" Cloth, Age 1951

1—50" Open Bleach Range, Mangle, Steamer, 4-box SS Washer

JAMES E. FITZGERALD
10 Purchase Street Fall River, Mass.
Tel. OS 8-5616

ADV. NO. 408

NOW IS THE TIME TO BUY

DRAPER LOOMS
12—Model X, 40" cloth, spring tops
7—Model E, 50" cloth, Lacey tops
25—Model XD, 46" cloth, Dobbies, Diehl Drive
20—Model XK, 44" cloth, Tafetta motions
120—Model XD, 46" cloth, 20 harness dobby
80—Model XD, 56" cloth, 20 harness dobby
200—Model XK, 44" cloth, spring tops, Unifil
120—Model XK, 44" cloth, 20 harness dobby
72—Modified D, 44" cloth, Lacey Tops
230—Model E, 40" cloth, clock springs, roll tops
350—Model E, 40" cloth, Motor Drives
322—Model X, 40" cloth, plain tops
22—Model X2, 32" cloth, plain tops
60—Model XD, 46" cloth, 25 h dobby, Unifil
24—Model P&R, 32 to 48" cloth, plain top, dbl arch
11—Model XP, 54, 62" cloth, dbl arch
18—Model XRO, 60 to 90" cloth, dbl arch
55—Model XU, 36, 62" cloth, dbl arch
30—XD Model, 60" cloth, 20 h dobby, Unifil
32—XD Model, 64" cloth, 20 h dobby, Unifil

C&K & OTHER LOOMS
48—C&K S-6 (By) 50" B/S 2x1, Dobby
39—C&K Cotton King, 53½" B/S, 4x1
22—C&K S-6, 80" B/S 2x1 for Jacquard Head
60—C&K C-4, 78" B/S 4x1 & 4x4 20-h dobby
34—C&K C-4, 72" B/S 4x4, 20-h dobby
8—C&K Woolen looms, 110", same side cam
2—Smith Velvet Carpet looms, 12 ft.
2—Landsdowne carpet looms 20/4
1—Needle loom, 120", 10" board

WINDERS
1—Abbott Quill Winder, 120 sp & pinboard
1—Whitin Schweiter quill winder, 24 spindle
5—#50 Cone winders, gear and belt gainer
6—#90 Quill winders, Dunrolling tension
200—Abbott Quiller motors & parts of winders
4—Whitin 1949 Silver Lag Winders

SUNDRY
12—Deliveries Whitin Bi-Coil Drawing, 1949
6—B/C Warp Tying machines, LC LS LL K

MACHINERY SALES CORP.
131 Court Street, P. O. Box 367
New Bedford, Mass. Tel: Wyman 9-6273

ADV. NO. 410

FOR SALE
Wildman automatic Rib Knitting Machines for plain and striped goods 8 to 14 cut, sizes 12" thru 21", with electric Stop Motions, guaranteed good condition.
Write to:
Emil Wolpert
P. O. Box 9413, Philadelphia 39, Pa.

ADV. NO. 409

All Types of Used Machines for Knit Underwear Mills
SCOTT & WILLIAMS and WILDMAN RIBBERS 8 to 16 cut, Sizes to 24"
TOMPKINS SPRING NEEDLE TABLES, All sizes and gauges
WILDMAN SPRING NEEDLE FBSS
WILLCOX & GIBBS FLATLOCKS, MERROWS, SINGER & METROPOLITAN SEWING MACHINES
Also Various types of SPECIAL MACHINES, CUTTING—CALENDERING—PRESSES, Etc.
Send us your Inquiries.
MOHAWK VALLEY KTG. MACH. CO.
Dwyer Ave. at Pixley St. Utica 2, N. Y. Phone 4-8109

ADV. NO. 411

MODERN MACHINERY FOR SALE

1—Rodney Hunt Cont Rope Bleach Range, 4000 lb. cap.—Age 1949

1—Butterworth 60" Rubber Belt Shrinkage Range—1956

1—Morrison Cont Open Dye Range 60"; Pad 15 ton; 2-Williams Units; 3 Washers; MG Set—1948

1—Richard Hyd. Calender, 60" wide, 40 ton, Vari-drive

1—P & S Loop Dryer 60' long, 126" sticks—1958

1—Verduin Hyd. Calender, 70" wide, 40 ton—Age 1960

1—James Hunter Gas Fired Tenter Finishing Range with Padder, Tenter and Housing

1—Tenter Palmer Range; Werner 70" Pneu. Pad. 10 ton, V.V. Tenter Frame, 60' x 66" wide, Nat'l Gas Fired Housing

1—David Gessner Hi-Torque Napper, 80" wide, 24 rolls

14—Stainless Steel Dry Cans, 74" wide x 30" dia.

1—Smith-Drum stainless steel 100 lb. Rotary Dye Machine

2—Riggs & Lombard Stainless Dye Boxes, 6' wide, 65" deep

22—Draper XD Looms, 54½" bet. swds, Diehl drive, 2-looms, Unifil—Age 1951

30—Warner & Swasey "Sulzer" Shuttleless Looms-80", 1950-2

24—C & K Model W3 82" Looms, 25 harness, motor

10—C K Model W3 64" Looms, 25 harness, motor

30—C & K Model S6 Looms, 56", 2x1 box, motor

1—Cocker 9-can Slasher, 60x30" cyls., M. G. Set

1—Johnson 7-can Slasher, 60x30" cyls., M. G. Set

1—Johnson 7-can Slasher, 74x30" cyls., A. C. Drive

1—Cyclotherm Package Boiler, 690 lbs. per hr., 15 HP—1950

1—I-R Air Compressor, 12x8, Class ER1, 30 HP

48—Atwood 10B Uptwisters, 100 spdls., 7" ga., 4½" ring, 8" traverse, ½" blades, 2 lb. pkg.—Age 1948

1—Whitin C6 Sample Banlon Downtwister, 24 spdls.—1952

2—Smith-Drum stainless Package Dye Machines, 500 lb.—1947

1—Abbott Paper Cone Winder #65, 100 spdls—1948

Alliance

Div. of Shaffer & Max Inc.

TEXTILE MACHINERY CORPORATION

Appraisals
Textile Machinery
Liquidations

37 NORTH THIRD STREET • ALLENTOWN, PENNA. • HEMLOCK 4-4897

ADV. NO. 412

FOR SALE
GOOD EQUIPMENT—PRICED TO SELL

1—BRUSHING MACH., P&W., 66", 2 Section, 4 Roll, 8½" dia. B.B. Nylon Brushes.
1—ROLL CLEANING MACHINE, Hadley, with Blower and Motor Drive.
1—KNITGOODS CALENDER, Kastrinsky, 42", 2 Roll, Steamer, Blower, Batcher.
1—CEILING CONDENSER, P&S., Double Drum 32" x 18" dia., ¼" Perf.
1—SEMI-DECATUR, Universal, Double Cylinder, 72", Vacuum Pump, M.D.
1—SEMI-DECATUR, Gessner, Perf. Cyl. 72" x 36" dia., Nash #2 Vac. Pump.
1—Extractor, Hercules, 48", S.S. Basket, Interlocking Safety Cover, M.D.
1—HOPPER FEED, Harwood, 54", Bottom Apron, Comb and Knockoff Roll.
1—HOPPER FEED, C&M., Atlas #2, 46", Bottom Apron, Vert. Spike Apron, Comb.
1—NAPPER GRINDER, B. S. Roy, 100", face and side Grinding Wheels.
1—PC. DYE KETTLE, R. Hunt, Trushade, S.S., Type M, 7 ft., 8 String, M.D.
1—LUMPER, Clark, 18" wide, B.B. Cylinder, Feed Table, Motor Drive.
25—LOOMS, C&K., Veribest, 4x1, 25 Harness Head, B.B. Crankshafts, M.D.
1—MEASURING & ROLLING MACH., P&W., 66", AWC Model, 100 yard dial.
1—KNITGOODS NAPPER, C&M., Single Roll, 66", Adjust. Rests, Blower, M.D.
1—NAPPER, Gessner, Single Acting, 80", 18 V-Belt Driven Rolls, Folder.
1—NAPPER, Woonsocket, Double Acting, 80", 36 B.B. Rolls, Folder, M.D.
1—MIXING PICKER, Clark, 48", 12 Bar, Feed Table, B.B. Cyl., Steel Bonnet.
1—MIXING PICKER, D&F., 60", Model 32, 6 Bar, Feed Table, Rolls, Steel Bonnet.
1—ROTARY STEAM PRESS, Gessner, Mod. 20, Hi-Speed, 66", Dble Bed, Spare Cyl.
1—SQUEEZE SET, R. Hunt, Wringmaster, 70", 15 Ton, with Scutcher, M.D.
1—ROTARY SEWING MACH., Morrow, 60ABB Head, portable cast iron stand.
1—ROTARY SLITTER, P&S., 84", with three 9" dia. Cutters.
1—SINGLE SHEAR, C&M., 66", Wire Raising Brush, Folder, Scray.
1—TEXTURIZER MACH., U. S. Acme Jumbo, 50 Spindles, 10 lb. packages, 10" traverse.

SISAL PROCESSING UNIT
Consisting of 30" Medrick Cutter, 2 P&S Shredders Model #170, P&S Garnett, Hunter Punch Loom, Economy Baling Press.

McDOWELL ASSOCIATES, INC.

General Offices
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Phone: Murray Hill 2-7417

Hudson, N. Y. Office and Warehouse
N. Front, Deck & Water Sts.
Phone: TA 8-3211

ADV. NO. 413

WE OFFER FOR SALE

1—Whitin Model A Axi-Flo with N-3 Feeder
24—Spindles Schweiter Quilling, 1949
14—Aluminum Section Beams, 30" Heads
35—Stainless Steel Tanks. All sizes & shapes
1—3500 Gal. S.S. Storage Tank, Closed Top
24—Draper 46" XD Looms, 20 Har. Dobby
200—Kidde double disc Tensions
1—L-4 Nash Hytor Vacuum Pump, 550 V Motor
1—Toledo 1600 lb. dial Scale 4 x 4 Platform
4—Lewis Shepard Hydraulic Skid Lift Trucks
1—24 Sp. Yarn Abrader, U.S. Testing Co.
1—Scott J-3 Yarn & Cloth Break Tester
2—Million 14" S.S. Flat Steel Heddles

INDUSTRIAL MACHINERY CO.
32 Boomer Street — P. O. Box 261
Fall River, Mass. — OSborne 4-8161

ADV. NO. 416

Searchlight Equipment Locating Service

No Cost or Obligation

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.) No charge or obligation.

First, read the dealer ads on these pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

SEARCHLIGHT Equipment Locating Service
Classified Advertising, c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

SEARCHLIGHT Equipment Locating Service
Classified Advertising, c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Please help us locate the following used equipment:

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NAME .....
TITLE .....
STREET .....
COMPANY .....
CITY .....
ZONE..... STATE..... 11/61

PICKER FEEDER

1—Proctor & Schwartz Model 656, 48" wide Picker Feeder with extended spike apron complete with motor...$1,000.00

FS-7613, Textile World
645 N. Michigan Ave., Chicago 11, Ill.

ADV. NO. 414

FOR SALE
1 Davis & Furber 48 x 60
FOUR CYLINDER CARD
equipped with 112 end tape condenser, Bramwell feed and overhead centre Scoth feed. Located in Canada for sale as is on the floor.
F. S. 7626—Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

ADV. NO. 415

LIQUIDATING

Modern Machinery for Dyeing, Finishing, Printing and Bleaching

Partial Listing

18—Enclosed and Open All Stainless Steel Dye Becks, up to 20' widths.
44—Enclosed and Open All Stainless Steel Dye Jigs, 50" to 70" widths.
5—40' x 60" Open Tenter Frames.
1—70" Heat Setting Machine, gas fired.
1—Junior Size All Stainless Steel Bleach Range.
1—57" Compressive Shrink Range.
1—50" 3 Roll Finishing Calender.
1—65" 15 Ton 2 Roll Pad, pneumatic.
1—60" 2 Roll 10 Ton Pad, micro-set.
1—50' 60" Mercerizing Range.
4—55" to 65" Hydraulic Calenders, 3 roll, up to 70 ton pressure.
1—70' x 66" Enclosed Finishing Range, gas fired Housing, 10 ton Pad.
9—40" to 64" 6 to 8 color Printing Machines.

Your inquiries are invited. *We welcome your inspection*

INDUSTRIAL PRODUCTS of AMERICA
P. O. Box 337
Fair Lawn, New Jersey
Tel: SWarthmore 6-1000

IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, S. C.
Tel: CEdar 2-3561

ADV. NO. 417

FOR SALE

2—Dodge Rag Pickers BB
2—Sargent 8 Bar 48" Mix Pickers with 48" Feed with Blowers and motors—Year 1948
1—Clark 8 Bar Mix Picker 42"—Motor Driven
1—Clark 48" Lumper
1—Benoit System complete with Scale, Weigh Box and Bramwell 14 Ft. Extended Feeder
1—Davis & Furber T-Slot Card 60" x 60" with Peralta
1—Davis & Furber Card 48" Wide x 60" Diam with BB Int. Feed, late type feeder, and Whitin Single Rub 80 End Tape Condensor.
1—P&S Type 442-30" Ceiling Condensor
1—Proctor & Schwartz 60" Bale Breaker
1—Schofield 42" Rag Picker Year 1950
1—Sargent Automatic Bagging Machine

COMPLETE GLASS TAPE WEAVING UNIT

5—Fletcher 1956 36 Space Looms
1—Ramsey Hydro Warper
1—Glodde Quiller—12 Head
1—McBride 240 End Mag. Creel
1—Ramsey Blocking Machine

All Auxiliary equipment including Bobbins, Heddles. All Machines 1956 and like new. Can be inspected in place where operated.

1—Sprout-Waldron Burr Picker with motor—1954
1—Duesberg-Bosson 72" Peralta
1—Staple Cutter with Rotary Blades—Diamond Cut
1—Taylor-Styles Staple Cutter, 14" Blades complete with Variable Speed Drive, motors and take-away aprons.
1—Barrel Drum 60" Grinder
1—D&F 60" Traverse Grinder
1—Davis & Furber 120 Spindle Model D Woolen Spinning Frame, 5" Ring—6½" Gauge complete with change gears.
200—Spindles for Model E Spinning Frames.
1—Motor Driven Scot Yarn Tester

24—C&K Automatic 82" Convertible Looms, 25 Harness, high Cloth Roll EWSM, Automatic Let-off—Excellent Condition
72—Spindles Whitin-Schweiter Filling Winders Type MS
2—D&F 98" Pinless Dressing Reels, complete with Hackstands, Beamer etc.
1—Toledo Yardage Scale with platform for Weave Room
One Million 8¾" Automatic 3-Ring Bobbins
1—Parks & Woolson Burling Range Complete with Dixie Shear—1950
1—Riggs & Lombard No. 65 Fulling Mill Rubber Rolls—Motor Drive
2—Riggs & Lombard 8 Ft. Washers—Wood Rolls—Motor Driven
1—Cook Detwister with Motor & switch
1—James Hunter Single Section Uniflow 8 Pass Cloth Dryer, Automatic Guides, Overfeed—84" Width.

MODERN STAINLESS STEEL PACKAGE DYEING EQUIPMENT:

1—Smith Drum 500 lbs. ⅝ Tubes SS Pump, receiving Tank 30 HP Foxboro Controls.
1—Smith Drum 300 lbs. as above
1—Smith Drum 200 lbs. as above
1—American Obermeir 100 lbs. package Dyer with Controls
All the above with 4-Way air operated valves.
1—Smith Drum Port Dryer.

1—Pair James Hunter 78" Pneumatic Squeeze Rolls, with Reeves drive and Ceiling Folder, Model G.
2—Model-A 66" P&W Shears 2-Blade
2—D&F 14 Roll 72" Single Acting Nappers
1—Gessner 80" Double Act 24 Roll Stainless Clothing with 2 Reeves Dr. & Motor
1—Gessner 72" D.A. 20 Roll Napper with 2 Reeves Dr. & Motor
2—James Hunter Rinse Bowls with 66" Pneumatic Squeeze Rolls.
1—Riggs & Lombard Continuous Dry Fulling Mill—Completely automatic with forward & Reverse and all electrical controls.
1—AWC 84" open Roll Winding & Measuring Machine

"THE MACHINERY DEALER WITH 20 YEARS MILL EXPERIENCE"

Write P. O. BOX 82 **J. LAURENCE LEWIS** PHONE: VOlunteer 2-4545 Call LEXINGTON 73, MASS.

ADV. NO. 418

Spinning Frames—Completely Modernized

Available Now From Stock

65,000 spindles, 3" gauge, Whitin Model F and B
20,000 spindles, 3" gauge, Saco-Lowell (latest head)
15,000 spindles, 3¼" gauge, Whitin Model B
7,000 spindles, 3½" gauge, Whitin Model F and B
5,200 spindles, 3½" gauge, Saco-Lowell (latest head)
6,000 spindles, 3½" gauge, Fales & Jenks (latest head)
3,600 spindles, 4" gauge, Whitin Model B

Completely Modernize with:

Open Type Umbrella Creels
Latch Bobbin Holders
Suction End Collection
Double Apron High Draft System
Individual Drive Pulleys with Ball Bearings
Ball Bearing Tape Tension Pulleys
Ball Bearing Top Drive Spindles
High Speed Rings

Suitable for: Warp or Filling Yarns, Cotton or Synthetic Staple

Attractive Prices on all or any portion of these lots
Delivery and Erection Supervision Can Be Included

ROBERTS COMPANY, Sanford, N. C.

manufacturers of textile machinery

Contact Trade-In Dept.: M. C. Golden, 775-4321

Export Dealer Inquiries also Invited

ADV. NO. 419

TEXTILE AUXILIARIES INC.

"SPECIALIZING IN BLEACHING, PRINTING, DYEING, AND FINISHING EQUIPMENT"

1—Textile Vertical Set of 8 —23" dia. by 50" Dry Cans with 3 Roll Padder for narrow fabrics, also 1 set of horizontal, 11—23" dia. x 24" Copper Dry Cans with 3 Roll Padder.
1—5 Color R. B. & F. Printing Machine, 44", complete with Backrigging, Dry Cans, motor, etc.
2—10'-1 —6' and 3 4' x 9' x 30" S.S. Dye Becks with set of Riggs Lombard Pneumatic Squeeze Rolls, 7½" dia., S.S. bottom roll and rubber top roll.
2—80' x 50", 1—30' x 72" Winsor & Jerauld Tenter Frames.

Calenders, Plain & Embossing, 2, 3 and 5 Rolls, up to 65" wide.
1—Butterworth Pin Tenter Frame 75' long by 200" wide, complete with tension bars, take off, housing 37' x 20' x 7'8", turbine blowers, produce 300 degrees F. and Chromolux setting unit, 213" rods, 450 degrees F., blowers, fans, etc.
2—Cook Detwisters.
Padders up to 120" wide.
Reeves Drives all sizes, open and closed.
Stainless Steel Tanks, all sizes.
Copper Jacketed Mixing Kettles.

We carry spare Padder and Calender Rolls, all sizes, also motors from 1 HP to 100 HP.
These are only a few items: For Detailed List: Write, Wire or Phone:
Dexter 1-9650 Dexter 1-8837 Providence, R. I. 146 West River Street

PROVIDENCE, R. I.

ADV. NO. 420

LIQUIDATING

DRAPERY & UPHOLSTERY WEAVING & DYEING PLANT

FORMERLY

HILL BROWN FABRICS

18 CHESTER ST. CLIFTON, N. J.

WEAVE SHOP

8—C-4-60" Auto Jacquard Looms
18—Draper 65" Auto Jacquard Looms
40—Draper 65" Auto Looms
8—C&K Gem Head 4x1 Auto Looms
60—Spindles W.S. Quillers
3—B.C. Model K Warp Tying Machines
2—Cocker Warpers 6 Cone Creels
6—Inspection Machines

DYE PLANT

Morton Warp Dyer
Mercerizer Range
Textile Loop Dryer
Proctor & Schwartz Dryer
Boil Off Unit
3 Roll Padders 76"
Werner SS Jigs—60"
Dry Can Sets
Doubling & Folding Machines
Fade-ometer
Morrow Sewing Machines

STAVE & KESSLER

106 KEARNEY ST. P.O. BOX 1611
PATERSON, N. J. AR 4-7486

ADV. NO. 421

NOW LIQUIDATING

RIVERSIDE MILLS—NEW BEDFORD, MASS.

240—Draper XK Looms with Unifils
168—Draper XK Dobby Head Looms
72—Draper D Looms—Lacy Top
2—Terrell L Strippers #887
2—Johnson 7 Can Slashers 60" x 30"
2—Market Forge Hyd. Sec. Beam Trucks
2—West. Compressors 10 HP & 40 HP

FROM OUR WAREHOUSE

3—B.C. Portable Knotting Machines, LC, LS, LL
200—Kidde Double Disc Tensions
240—V.R. 3 Shift Pick Clocks
WALTON & AMCO HUMIDIFICATION
STAINLESS STEEL HEDDLES & FRAMES
LOOM BEAMS AND FLANGES—DROP WIRES

PAWTUCKET MILL SUPPLY CO., INC.
240 YORK AVE., PAWTUCKET, R. I.

ADV. NO. 422

1—Whitin Model D Staple Cutter
56—40" Lap Trucks—6 laps each
30—Del. S. L. 4-Roll Drawings—14" coilers
1—Holdsworth Gill-Quad—can feed and delivery
1—Kitson W3 2-Beater Waste Picker
4—Whitin Model B.B. Twisters—136 spin., 5 ga., 3¾" ring
20—Universal #50 Winders—3/30, pineapple and evolution
1—Atwood Model 200 Redraw—68 spindleless type spindles
3—Cocker Drum Warpers 54-¼-550V, brake motor
1—Sipp Silk System Warper 84"—8 yd. mill
1—Terrill Model L Bobbin Stripper—400 Series
40—Pr. 50" XD Loom Arches—complete
180—40" K Looms—cam—Bartlett let-off—M.D.
100—50" E Looms—cam—M.D.
1—B.C. Model LL Warp Tying Machine—M.D.
1—H & W Yarn Conditioner RT2—60 x 60 x 64
350—10 x 15 dia. Steel Beams

RAYTEX SALES COMPANY
P. O. BOX 36 NEEDHAM 92, MASS.
Hillcrest 4-3696

ADV. NO. 423

AUCTION

MACHINERY & EQUIPMENT

FORMERLY OF THE

HELLWIG DYEING CORP.

Comley St. & Delaware Ave., Phila., Pa.

THURSDAY, NOV. 30, 1961
AT 10AM ON PREMISES

SKEIN DYEING: 150 Arms Smith Drum S.S. cascade skein dyeing machines 1, 3, 7, 12 and 20 Arms; Burlington Engineering 1000 lb. S.S. twin kier package dyeing machine; Gaston Co. extractor and 4 port package dryer. PIECE DYEING: 6 Rodney-Hunt & Blickman 20', 3/16" S.S. totally enclosed piece dyeing beck; 1 Rodney-Hunt 16' totally enclosed piece dye beck; 5 Rodney-Hunt 10' S.S. dye becks; 4 Van Vlaaderen 60" S.S. enclosed tensionless auto dye jigs; 7 50" S.S. dye jigs asstd. PADDERS: Butterworth 65" pneumatic set roll. TENTER FRAMES: 4 Morrison & Butterworth 40', 60"; 1 Butterworth 40', 50". CALENDER: K & G 50" 3 roll silk, 48" 3 roll; 3 54" silk embossing. SEMI DECATERS & PALMERS: 3 Van Vlaaderen 50" Semi Decaters; Van Vlaaderen 66" Palmer. HEAT SETTING MACHINE: Proctor & Schwartz, 72" gas fired. DRYERS: National 92" loop dryer, 10 fans; National 76" loop dryer, 20 fans; National loop dryer, 4 fans; Proctor & Schwartz 86" air lay dryer, 18 fans; Proctor & Schwartz 96" Air lay dryer, 10 fans; Proctor & Schwartz 84" air lay dryer 6 fan; Hinnekens 66" boil off machine; 60" singeing machine; 20 Merrow, Singer, Metropolitan and asstd. sewing machines. MISC. EQUIPMENT: 35 Yale & Shaw box elec. roller chain and cable hoists ¼ ton to 2 tons cap; 15 asstd chain hoists; I-R 8x9 Horizontal air comp.; 1 hp air compressor unit; Quantity s.s & Wood box and platform trucks; Hydraulic lift trucks; Clark 1 ton gasoline fork lift truck; Yale electric ½ ton fork lift truck, large lot wood pallets; battery charger; steel stock shelving, and storage racks. MISCELL. OFFICE EQUIPMENT, ETC.

EXHIBITION: NOV. 27, 28, 29
from 10AM to 4PM

WRITE FOR ITEMIZED CATALOGUE

SAMUEL T. FREEMAN & CO., AUCTIONEERS

1808 CHESTNUT ST., PHILA., PA.

ADV. NO. 424

LIQUIDATION

GARNERVILLE, NEW YORK HAverstraw 9-9224

1—110' VV super frame 66" wide with National Housing, Mt. Hope Scray & Weft Straightener and 70" Pneumatic Padder 15 ton

3 sets 70" SS cans, 35 lb. (7) (9) (12)

1—90' VV super frame 66" wide with National Housing, Mt. Hope Scray, Perkins Automatic batcher and 70" Pneumatic padder 15 ton

3—VV tuber doublers 50", 66', 70"

1 set 17 130" SS cans 35 lb.

3—VV BS calenders—50", 55", 60" with spare rolls

2—VV double pump decatizers with blankets

5—VV tensionless tubers 60"-70"

1—National drybox 104" 20 fan late style

22—Dyebecks, wooden SS lined and SS self sustaining

2—3' ss enclosed dye becks

1—Hercules 48" extractor SS® basket

4—Hinnekens boiloff machines—50", 60", 66", 70"

1—Progressive 74" Examiner

2—Werner 50" Pneumatic embossers with inking attachments and spare rolls

1—Verduin Pneumatic glazing & friction calender 20 ton 48"

4—VV 60" Model 720 Jiggs, tensionless with SS covers

3—VV 65" Jiggs SS

5—Werner 70" SS Jiggs

2 Birch Bros. Scutchers 72" complete with Nash pumps & motors

2—VV 50' tenter frames with national Housing 18' 60" & 66" wide

2—VV Singeing machines 60"-72"

4—VV Beamers 60"-66"

52 BERKSHIRE AVE., PATERSON, NEW JERSEY **MAR-DAY TEXTILES** CALL FOR APPOINTMENT MUlberry 4-5132-3-4

WILL GIVE TERMS! **WILL GIVE TERMS!**

ADV. NO. 425

LEGAL NOTICE

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT AND CIRCULATION

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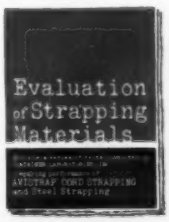

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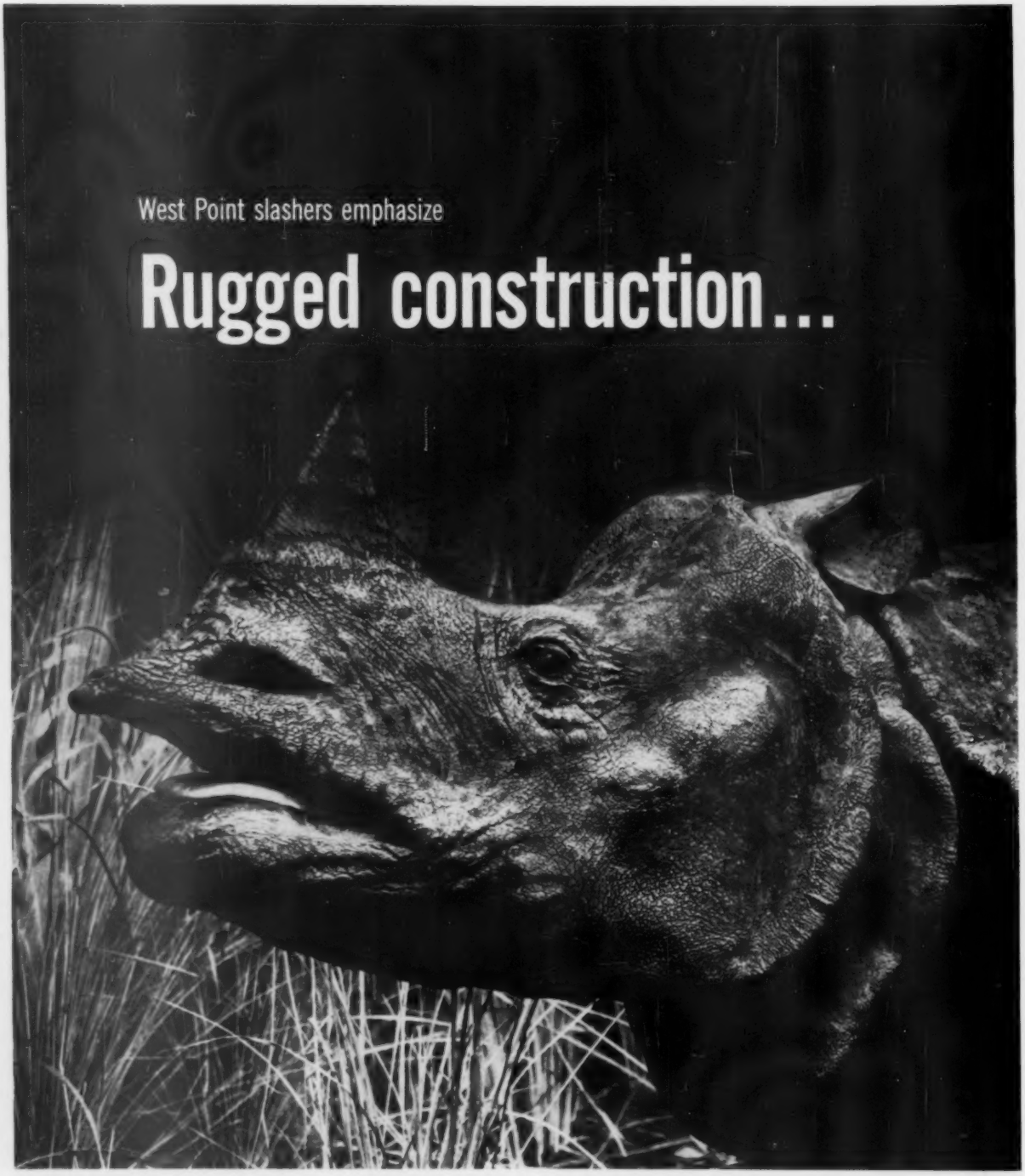

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